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THIS WEEK'S NEWS

A REPORT of the planning inquiry into Maidstone Borough Council's refusal to approve a house design is given on p. 287

"IF MORE STUDY were given to the finesse of elevational design, the visual monotony which is the weak point in so much contemporary architecture could be avoided," observes a correspondent in a letter on "slab architecture." p. 288

THE STAGE REACHED in the development of Bracknell is described in the latest article in our series "Progress on the New Towns," presented on p. 289

"EVEN IN THESE DAYS of high subsidies, somebody has got to find the rent. Indeed, the whole fabric of the modern Welfare State ultimately depends upon work, however much, up to now, we may have put the cart before the horse." This observation was made by Sir George Pepler in his paper on the place of housing in town planning, extracts from which are given on p. 301

THATCH as a covering material for pitched roofs is discussed in a further article on church roofing materials, prepared by the Roofing Committee of the Central Council for the Care of Churches. p. 304

A SUCCESSFUL APPEAL against Oxfordshire County Council's refusal to allow the construction of a "modern-style" farmhouse and herdsman's cottage is reported on p. 309

DETAILS of the Ministry of Education's request to local authorities for particulars of their future steel requirements for educational buildings are given on p. 310

THE MINISTER OF WORKS is to open the first house to be supplied to Canada under a 100,000 dollar contract, details of which are given on p. 310

CONTRACTS AND CONFERENCES

THE system of adjustment of builders' tender prices by a third party, undertaken before such prices are received by the building owner or his agent, has attracted attention in the public Press following a speech made at Sittingbourne on August 10 by Mr. Percy Wells, M.P. Mr. Wells, who directly coupled the London Builders' Conference with his charge that the cost to the public of schools and houses in Kent and elsewhere had been increased, by reason of the operations of the Conference and like regional organisations, "by some hundreds of thousands of pounds," is to raise the matter in Parliament with the Ministers of Works and Housing and Local Government.

In commenting on the activities of the London Builders' Conference twelve months ago * (comment which arose from the reaffirmation by the Royal Institute of British Architects of a pre-war decision strongly disapproving of the methods of the Conference, and a recommendation to Institute members to secure a written undertaking from tenderers that, among other things, their prices are neither known to nor adjusted by a third party before being sent in), we expressed the view that the Conference method, designed to secure a fair price for building work, was not an acceptable solution of an admitted problem. We put forward the proposal that a meeting of the parties concerned should be held. As a result, a small *ad hoc* committee of representatives of the National Federation of Building Trades Employers, the London Master Builders' Association, the Royal Institute of British Architects and the Royal Institution of Chartered Surveyors was appointed and has met, though it is understood that it has made no recommendations.

A matter then confined to the industry has now become one of public concern as a result of Mr. Wells' speech which was based on Kent County Council Buildings Committee's recent action in requiring all contractors on its approved list to sign the R.I.B.A. declaration, failing which they would not be permitted to tender for the County Council's work. Whether other counties follow Kent's lead must depend on the case which Sir Alfred Hurst, Chairman of the Conference (who also advises other similar regional bodies), makes out at the County Architects' Society's meeting next month, and also on Parliament's reaction to Mr. Wells' questions.

The building industry at large is concerned at a trend of affairs which can hardly fail to result in the contracting industry in general being labelled publicly as resorting to price-fixing. Two things should be made clear: (1) that in the opinion of the Simon Committee of 1944 on the Placing and Management of Building Contracts such associations in defence of trade interests are perfectly legal, and (2) that the best opinion in the industry is condemnatory of the evils inherent in the current tendering system, to check which the London Builders' Conference came into being.

That having been said, it must be noted that the Simon Committee, the R.I.B.A., the R.I.C.S., a large body of informed opinion within the industry itself, and now an influential building authority in the shape of the Kent Buildings Committee have declared against the Conference. It is not proposed to recapitulate here the Conference method, for this varies considerably with circumstance, but it may be said that it involves (*a*) the disclosure by each Conference tenderer for a contract of his price before submission to the building owner; (*b*) the addition of a sum to cover cost of tendering (which, on the basis of 10 competing firms, could of itself add £550 to a £50,000 contract); and (*c*) the possible adjustment of the various tender prices by the Chairman of the Conference so as to give a "fair price" to the successful tenderer.

The objections of the R.I.B.A. and the Chartered Surveyors to the system are (1) that the operation of the Conference has the effect of adding an amount to the tender price for which

* *The Builder*, July 27, August 24 and September 21, 1951.

the building owner receives no visible or tangible return; and (2) that in so far as the difference between the adjusted price and the original price goes not to the builder who secures the contract but into the Conference funds, the raising of the price has no effect upon the quality of the work.

It may well be that investigation of the method of operation of the London and Regional Conferences may be undertaken by bodies outside the industry, which would be a matter for considerable regret. If so, it is to be remembered that the Conferences represent an attempt to cure a set of conditions in building to-day which is generally deplored and which reacts unfavourably on builder and building owner alike—i.e., the incidence of cost of preparing tenders caused by excessive competition; the temptation to give less than a first-class job by reason of the work being taken at an uneconomic price; the likelihood of errors in tendering under rush conditions; and the putting into competition of builders of widely differing standing and standards. These evils are admitted and when we restate our view, expressed twelve months ago, that the Conference is not the answer to them, this must not be taken as meaning that we consider such evils must be borne indefinitely.

The present situation calls for reconsideration at the highest level of the present system of placing contracts, with the simple end in view of securing to the building owner full value for his money and for the builder fair recompense for his outlay and skill. If recent events prove anything, it is that the industry has allowed time to catch it by the forelock and that action cannot longer be delayed. We suggest that the present *ad hoc* Committee now considering matters should be augmented and that it should consider and report with all possible speed upon the means for securing improvement of the present manner of placing building contracts. Such a committee might, for a start, begin by considering the alternatives of :—

(*a*) a negotiated price with a selected builder;

(*b*) an invitation to tender on a priced schedule with a plus or minus percentage to be inserted by tenderers; and

(*c*) an invitation to tender on a priced Bill of Quantities with a plus or minus percentage inserted by tenderers.

Any investigating committee should include representatives of the Ministry of Housing and Local Government for it is most necessary that consideration be given to the abolition of local authorities' Standing Orders which compel them to advertise for public tenders. There is a strong feeling that local authorities should have selected lists of builders; that tenders should be disclosed; and that only the priced bills of the tender to be considered should be opened.

To conclude, those who interest themselves in the London Builders' Conference will do well to remember that it is merely a symptom of a disease and that to ignore or remove a symptom does not cure an illness. It is for that reason that we put forward a practical proposal which it is hoped may lead to action before the matter be taken out of the industry's hands.

NOTES & NEWS

BENEVOLENCE

MANY organisations whose existence depends upon the financial generosity of others, have in recent years received fewer and fewer and smaller and smaller donations, while requests for their assistance have steadily increased. The result in most cases is that they are finding it extremely difficult to meet all the demands made upon them and are forced to make more frequent and urgent appeals.

The Architects' Benevolent Society, which does so much for those members of the profession who find themselves in need, makes no secret of the fact that there is cause for some concern about its present and future position. In the annual report of the Society which was recently issued, an account is given of the annual meeting held in May last when Mr. H. S. Goodhart-Rendel, honorary treasurer, was able to describe the Society's financial position only as "fairly satisfactory."

The total of regular contributions, he reported, was little more than 2,000 which was bad considering the size of the profession (over 17,000 on the Register). He also pointed out that the Society was not content with the scale on which its grants were made, but until it got more support that scale could not be increased. Neither, he added, was the £9,000-odd in the Centenary Fund anywhere near enough for the purpose for which it was intended.

It is important that every working architect should know these facts and pledge himself to make what contribution he can to help the A.B.S. out of its difficulties.

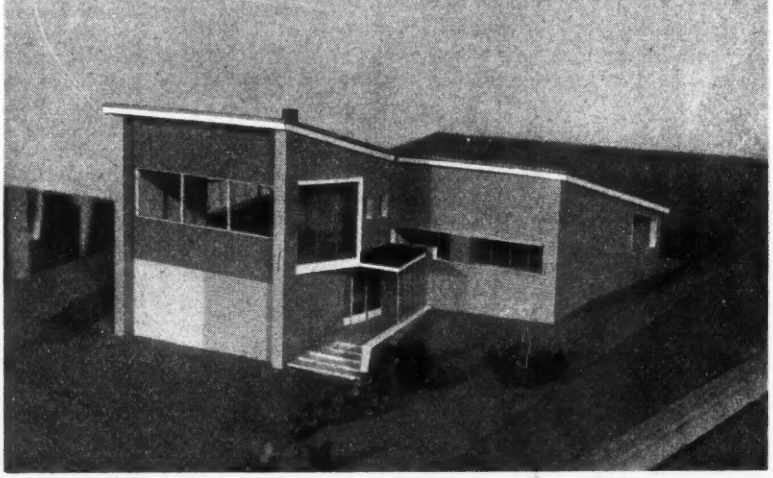
HOUSING RESEARCH IN AFRICA

THE UNITED KINGDOM has been invited by the Commission for Technical Co-operation in Africa to send delegates to a conference on housing research to be held in Pretoria during the second half of November. The U.K. is a member country of the Commission, which also includes Belgium, France, Portugal and Southern Rhodesia. The conference has been organised by the Union Government in collaboration with the Council for Scientific and Industrial Research and an interdepartmental conference committee has been set up. Doctor P. J. du Toit, F.R.S., President of the C.S.I.R., will be the chairman and Mr. J. E. Jennings, director of the National Building Research Institute, the convener.

Invitations have also been sent to the World Health Organisation, the Housing and Town Planning Division of the United Nations Department of Social Affairs, and the Scientific Council for Africa. Object of the conference will be to exchange views and experience on technical aspects of building and housing in Africa south of the Sahara and to record research and experimental work in the field of housing for the native people of Africa. Foreign papers will also be read. The main items on the provisional agenda are the planning of communities, house planning, considerations of health in housing, materials and methods of construction and economics of building.

A.A. ANNUAL MEETING

HIS presidential address to the Architectural Association will be given by Mr. A. R. F. Anderson at the annual general meeting of the A.A. to be held on October 29. On the same day an exhibi-



DESIGN FOR A HOUSE AT MAIDSTONE (from a model) for which planning permission has been refused by Maidstone Town Council. A report of the inquiry is on facing page.

tion of members' holiday sketches will be opened at the Association's premises and will remain open until November 21.

AUSTRALIAN HOUSE DESIGN

SOME IDEAS on architectural design in Australia have been put forward by F. E. Towndrow, A.R.I.B.A., now Dean of the Faculty of Architecture at the New South Wales University of Technology. He believes that the Australian climate, building materials and workmanship will eventually produce an architecture entirely Australian and free from European influence. Professor Towndrow sees the Australian house of the future as a more lightly constructed building, taking on the subdued colours of the Australian bush and sandstone. The building materials would be mainly timber, but other lighter materials would also be used, such as light-weight concrete.

A warning note: Professor Towndrow said he believed, however, that Australian architecture would never grow up while building prices remained high and put the cost of house building beyond the income of the average Australian.

SIGNWRITERS' ARCHITECTURE

ARCHITECTS who ply pencil in the Grays Inn area have noted with faint surprise and alarm a hoarding on a vacant site in Holborn, near Chancery-lane, on which is depicted a design for a new office building proposed to be erected. The drawing bears many of the marks of a child's essay in eggbox building design, even to the ground-floor pier which is shown cutting into a first-floor window, and the vandyke-brown entrance which seems just to have escaped being lettered "Door." It is difficult to associate the distinguished firm of architects whose name appears under the drawing with the production of this example of "Signwriters' architecture"; no doubt they will take steps to secure amendment of an announcement which, in its present form, can do the art of architecture little good.

MATERIALS EXHIBITION

AN EXHIBITION of building materials which, because of the impartiality of its sponsors should be of interest to all, is taking place in Cardiff until Saturday (August 30). Organised by the South Wales Chapter of the Incorporated Association of Architects and Surveyors, its aim is to bring new ideas and developments into contact with the industry.

ARCHITECTS' ESTATES

MR. JOHN HAMILTON STEVENSON, F.R.I.B.A., of Stonepoint, Greenisland, who died on October 6, 1950, left £75,623.

MR. JOHN GOODMAN, of Moseley, Birmingham, the oldest member of the Birmingham and Five Counties Architectural Association, left £90,983.

PROFESSIONAL ANNOUNCEMENTS

MESSRS. BASIL SPENCE AND PARTNERS have removed their London office to 48, Queen Anne-street, W.1. Tel: Welbeck 9923).

MR. A. W. RUSE has announced a change in business address to Walter A. Ruse, L.R.I.B.A., Esur Studio, 17, Richmond-terrace, Clifton, Bristol 8.

COMING EVENTS

TUESDAY, SEPTEMBER 2

ROTARY CLUB OF GLASGOW.—Luncheon to L.M.B.A. president, Mr. D. E. Woodbine Parish, who will address them.

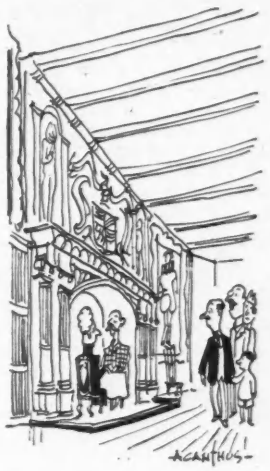
THURSDAY, SEPTEMBER 4

ROTARY CLUB OF EDINBURGH.—Luncheon to L.M.B.A. president, Mr. D. E. Woodbine Parish, who will address them.

FROM "THE BUILDER" OF 1852

Saturday, August 28, 1852

CHICHESTER CATHEDRAL.—The restoration of this venerable cathedral is still progressing. The nave now presents, with the Purbeck marble pillars and string courses restored to their original form and colour, and the walls cleaned, a finished and beautiful appearance. The same work of renovation is now commenced in one of the side aisles. During the present summer, the roof of the south transept, which, in some former age, had been lowered, so as to be nearly flat, has been raised to its original pitch, and produces a fine effect in a distant view of the cathedral.



"The family, as you see, still uses the banqueting hall."

A HOUSE AT MAIDSTONE, KENT

Planning Inquiry into Council's Refusal to Approve Design

"DEPLORABLY low standards of domestic architecture," were condemned by Mr. John W. Poltock, A.R.I.B.A., at an inquiry at Maidstone on August 21, conducted by Mr. R. J. O'Donoghue, of the Ministry of Housing and Local Government. Mr. Poltock was appealing against the refusal of the Maidstone Borough Council to approve the plans of a house and garage he had designed for Mr. George Beattie, of London-road, Maidstone.

Mr. Poltock is a practising architect and head of the department of architecture at the Medway College of Art. His design in *The Builder* £1,000 House Competition was highly commended.

Opening his appeal he said it was important because he had attempted to design a contemporary house of the type sadly lacking in Kent. Any attempt to design a house with to-day's materials and in to-day's manner ought not to be thwarted by backward and retrogressive ideas.

The progressive owner of the house, Mr. Beattie, said he had always been interested in contemporary architecture. He had asked Mr. Poltock to design a house for four adults and three children. "I wanted a house which could be used throughout. It must have a large communal living-room and smallish bedrooms," he said. "It should have central heating, plenty of fresh air and natural light. I chose the site because it could not be overlooked, it was quiet and there were excellent views." He told the Inspector that the approximate cost of the house was £3,000.

DESIGN "OUT OF KEEPING"

Opposing the appeal, the Town Clerk of Maidstone, Mr. Graham Wilson, said the Council's objection to the design was that it was out of keeping with the existing, approved and future development on the estate and the surrounding countryside. The council was not opposed to progress or the development of contemporary architecture in the proper places.

Mr. John Ashlin, Borough Building Inspector, agreed that one of the reasons for the council's refusal was that the house could be seen from the main road.

Mr. Poltock commented that it seemed as if the council would agree to contemporary designs as long as the house could be hidden from view. What encouragement was that to young architects?

Mr. Ashlin said the house was not traditional. He defined the term as "the type of house one has been accustomed to seeing in the period immediately before the last war." He agreed that Mr. Poltock intended to build the walls and windows "traditionally" but said he did not know of another asbestos-roofed house in Maidstone. He thought the value of surrounding property would depreciate if Mr. Beattie's house was built on the estate.

The estate owner, Mr. Henry Norman Smith, said he had not sold land to Mr. Beattie. There was only a gentleman's agreement. He would have to approve plans before allowing a house to be built. Now that he had seen Mr. Poltock's design he would not sell a plot of land to Mr. Beattie.

Mr. Poltock described the design "honest, simple, and straight-forward" with nothing spectacular about it. "This is a very important matter of principle. Up and down the country a lot of money is being spent on training architects. Is their work to be at the mercy of the uninitiated?

"It is most important that people of reasonably enlightened views like Mr. Beattie, should not have their enterprise and their foresight nullified by what is, erroneously in my view, considered to be public taste."

CORRESPONDENCE

"SLAB ARCHITECTURE"

To the Editor of *The Builder*

SIR,—Mr. L. G. Pearson, in his article in your last issue, made some telling points, practical and æsthetic, against the "Slab" (or, as you yourself called it in a leading article some time ago, "Horizontal Sandwich") type of elevation, which has become almost a world-wide characteristic of contemporary architecture.

The great increase in tall flats, with their repetitive accommodation, has emphasised this problem in elevational design. Sir Hugh Casson says: "The over-blown Georgian vicarage is as futile as the monster filing cabinet is degrading," but surely, if we have got to have flats, these are not the only alternatives. I have seen in your own pages illustrations of flats which avoid both these extremes by the "patterning" or grouping of windows, wall spaces and private balconies—which at least suggests human scale, so far as it can be suggested, in these cliff-like façades. Balcony access itself, the chief cause of horizontality in flats, has on occasion been successfully avoided, or contrived unobtrusively within the building line.

The stressing of the horizontal dimension may be no more than a passing fashion, for it is illogical except where the floors and walls are supported by cantilevered beams. Where there is a normal frame, why should not the vertical as well as the horizontal dimension be acknowledged? Much attention is rightly given to-day to the science of planning, but need elevations be left to take care of themselves? If more study were given to the finesse of elevational design, the visual monotony which is the weak point in so much contemporary architecture could be avoided—even with the use of standardised mass-produced materials of the newer kind.

PYRAMUS.

SACRED ART

To the Editor of *The Builder*

SIR,—The difficulty with this subject is that it cannot properly be discussed apart from its religious significance, nor can freedom for the artist be considered very much without regard to the philosophy of freedom—and neither of these other subjects is appropriate to your columns. But since the discussion arose from a leading article in this newspaper, perhaps I may be allowed to pursue it a little further before you apply the closure.

When "G. J." (your last issue) assumes that whatever is not accepted as "a good and progressive development of the approved and venerable traditions" has no other category than to be classed "corrupt and errant," the assumption is his own and he should not try to lay it elsewhere. Nor would one defend as good and progressive development every kind of "highly coloured, realistic sculpture" which he says is found in so many Roman Catholic churches. Much of this is undoubtedly stereotyped and unimaginative, yet we should not on that account dismiss entirely its appeal. The Church is not serving in the majority the intellectuals, and inspiration by the touchstone of "creative art" is not given to us all.

The claim of the artist to be free in the general sense is not disputed. As I had said, the artist has a wealth of subjects on which to express himself, and an immense variety of places in which to do so—nowhere, indeed, more absolutely than in the lunatic asylum. *To express himself*—those are the operative words. The artist, free to express himself so widely, should not cavil when he finds he is not free to do so in a place of Christian worship, because the Christian religion is not a humanist religion. Its dominant note in the expression of the relationship between man and his Maker is not what a man feels about this relationship, but what One Man has said all men should strive to feel about it. It is not, therefore, a religion of full freedom any more, except in the sense that it can set one free. This is not the place to applaud or to defend the idea of a conditional freedom. The point is that if one does accept it then there is no real *verboten* in the decrees of the Holy Office concerning Sacred Art.

The Holy Office may possibly not, as G. J. suggests, know much about creative art, though it probably knows quite a bit about creative artists. Charles Morgan, in one of his essays on *Liberties of the Mind*, gives an amusing sidelight on the creative artist, a cave-man who had drawn a mammoth on a rock, and who was a little piqued because his wife could only see fit to criticise it from the angle of realism, whereas he himself had intended to portray not just a mammoth but "what I feel about a mammoth." He thought he would put the test to his young daughter, who reacted, to his astonishment, by falling down and adoring the picture! At which, after a little cogitation, the cave-man was flattered, for he realised that, intentionally or not, he had drawn "Belinda's idea of God." "Perhaps," he said, "that is what art *is*!"

Morgan applauds him in that he had understood the relationship of his art to Belinda. That is one aspect of it. But although the artist can be free to express his own or somebody else's ideas about religion—either in his own cave or on a much wider canvas if he can catch on with the intelligentsia—he cannot be permitted to do so in a place of Christian worship, for in such a place, to echo the words of Jaques Maritain, he must know where he stands, and who he is, before knowing, and in order to know, what he should do.

But when the Artist *is* given his opportunity, what does he do with it? Your pages last week serve as a fitting commentary. Here we see the most modern building in the world, the United Nations Secretariat Building, in which 14 creative artists have produced for our delectation a "monster filing cabinet," so much in the spirit of the times that, according to report, its vacant face flapped in at the first buffet of healthy wind and has leaked ever since. Its shocking inhumanity can best be judged in the picture which shows the human fly wiping its deathly eyes. Turning a few pages on from this we come to a report and picture of Maple Lodge Sewage Works in Hertfordshire. Here, of course, the Artists were not free; they were governed by many inexorable decrees, more fierce in their way than any of the Holy Office, besides all the technicalia that go with that horrid subject—Drains. Yet I think that these Artists—dear me, some of them were Engineers!—have turned out a result much more pleasing to the eye and fancy than the 14 who had the unique opportunity to interpret in Manhattan the free expression of our times.

S. W. H.

Bristol.

COST OF PRINTS OF DRAWINGS

To the Editor of *The Builder*

SIR,—There is widespread misunderstanding of the position with respect to the cost of supplying prints, although the R.I.B.A. Scale of Charges deals completely with the matter.

Obviously the originals of all drawings must be retained by the architect, and all the reproductions he issues are copies. He is required within his 6 per cent. fee to furnish two copies of working drawings to the contractor. The furnishing of additional copies to anyone is the proper subject of an additional fee. The word is "furnish"—that is, to obtain, colour and prepare as may be necessary, and to despatch the copies.

The Scale stipulates further that it is exclusive of the cost of copies of documents. Clearly, then, to furnish a print does not include paying the cost of the print and the architect is entitled to charge his client with the cost of all prints.

W. W. J. TROLLOPE.
(Richards and Trollope.)

14, Sackville-street, W.1.

A CITY ARCHITECT'S DUTIES

To the Editor of *The Builder*

SIR,—Excluding Scotland, it is on record that architects sat examinations for quantities since the year 1674, and another society was formed which prepared in 1829 a syllabus. Recognised quantity surveyors came into prominence in 1906, although their numbers could be counted on the fingers of one's hands. They were not the first, and although one particular authority, earlier, sold to the public a schedule of prices, it was not compiled by quantity surveyors.

A great influx of unattached members into the profession of quantity surveying took place between the years of 1928 and 1934 but the greatest influx was seen between the years 1939 and 1945.

Because most architects have discarded the preparation of quantities to make their duties lighter, it does not imply that they are to be shot at by members who formed part of the influxes I have referred to. I hope this answers Mr. Vinycomb's question in your last issue.

W. MACDONALD.

16, Chiswick-lane, W. 4.

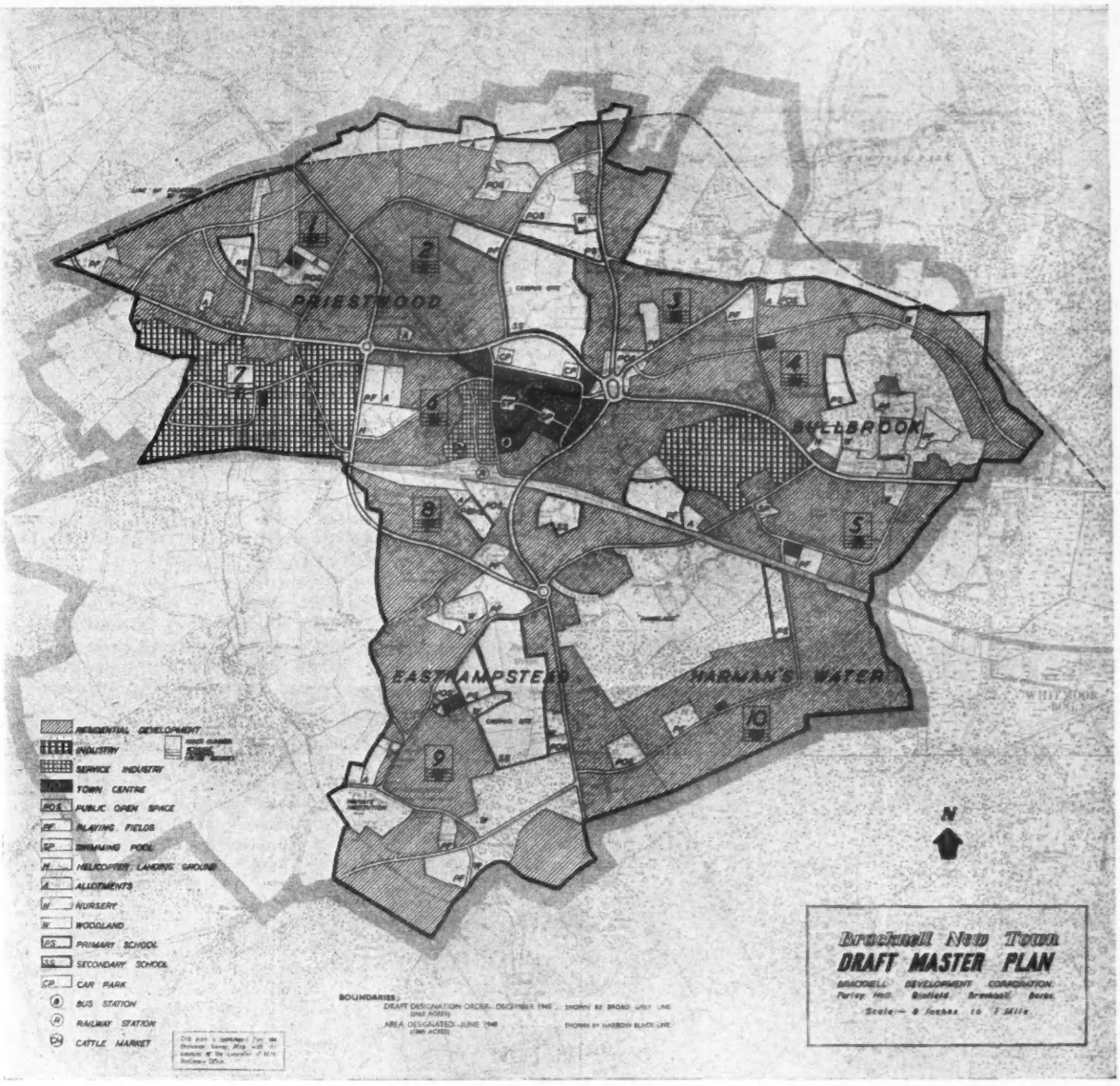
BATS IN THE ORGAN

To the Editor of *The Builder*

SIR,—Can any of your readers suggest an effective method of ridding a building of bats? A parish church in one of the villages near Exeter has been invaded by these creatures, some of which have made their home in the organ, and it is feared that considerable damage may ensue if they are allowed to remain.

S. N. PRATT, Director.
Sidney Pratt (Builders), Ltd.

Wynard's Works,
Old Rydon-lane, Exeter.



PROGRESS ON THE NEW TOWNS

7.—BRACKNELL

By Our Own Representative

BRACKNELL was one of the last of the eight New Towns in the Greater London area to be established, and it was not until October, 1949, that the Development Corporation was set up under the chairmanship of Sir Lancelot Keay, K.B.E., F.R.I.B.A. On account of this late start Bracknell has naturally been able to profit in certain respects from the experience gained in the other New Towns, but it is only fair to point out that the Corporation has also been faced with some unusual difficulties which many of the other New Towns have been spared.

The first of these particular difficulties came about as a result of the Public Inquiry which followed the publication of the draft designation order in December, 1948, when vigorous protests were made against the taking of farm land. Subsequently, some 760 acres of agricultural land were omitted from the New Town and the area finally designated in July, 1949, amounted to only 1,860 acres.

The original proposals allowed for the expansion of the town by taking people mainly from the western London boroughs, with which the town is "linked," from its existing population of 5,000 to 25,000, but despite the fact that its area would be reduced by the loss by over 30 per cent. the Minister still required the new Bracknell to house the same ultimate population: nevertheless he made it clear that in view of the amount of existing development some additional land might be required later.

The diminished area available has meant the necessity for tight planning, and also the loss of the town's own green belt, but it is hoped to preserve an open space around the New Town through the co-operation of the county planning authorities. Here it should be mentioned that a further loss to the Corporation has occurred through the retention within the area of the R.A.F. Ramslade Staff College, which has made a 120-acre "hole" in the town.

In drawing up their draft Master Plan, which was the subject of a well-attended exhibition last April (3,600 visitors were recorded), the Corporation's staff have found it impossible to find adequate sites for industry within the present bounds, and the conclusion has been reached that it is essential to reinclude some 60 acres of agricultural land in the New Town in order to make the Western Industrial Area, as it is known (there is a smaller Eastern Industrial Area near the town centre), an economic unit. The Minister has issued a draft variation order accordingly, and an inquiry into the objections was held on August 27.

The other major problem has been the difficulty of launching out on a major building programme in the face of the past year's rapidly rising building costs. Plans were drawn up earlier this year for 661 houses, but when tenders were received for their construction it was realised that prices were much too high, and that to reduce them sufficiently the houses would have to be completely redesigned to what may be known as the "Bracknell People's House" standard. Many weeks of hard work by the architectural staff had thus to be scrapped and although plans on the reduced standards were drawn up as rapidly as possible it was inevitable that three or four valuable months should be lost in the process. A contract was, however, let for roads and sewers in readiness for these houses, and tenders have now been received and a contract placed for 135 houses of the new type.

DEVELOPMENT TO DATE

These setbacks have not meant that no building at all has so far taken place. In view of the pressing need for new houses the Corporation decided early to make a start on house-building where this could be done without danger to future plans, and where existing services could be utilised. A contract was accordingly let for the first 72 houses and some garages on the Meadow-way, Binfield-road and Stoney-road sites, for which Messrs. Louis de Soissons, A.R.A., and Partners were the architects. These projects, known as Alpha 1 and 2, have now been completed. The same architects and contractors were subsequently chosen for the next preliminary project, Alpha 3, to consist of a further 126 dwellings and 33 garages on an adjacent site, and the contractors entered into possession of the site at the end of June last year. As with Alpha 1 and 2, the Corporation's engineering staff were responsible for the design of roads and sewers and for the supervision of engineering works and laying of services. To date 32 of these houses have been completed, making a total for the New Town by August 18, of 104 dwellings completed. The whole contract is expected to be completed by the end of the year.

For all future schemes the Corporation intends to employ its own architects, but the Alpha projects were given to an outside firm for reasons of speed. The Corporation state that the attractive design and layout of these first schemes has done much to allay local fears concerning the New Town.

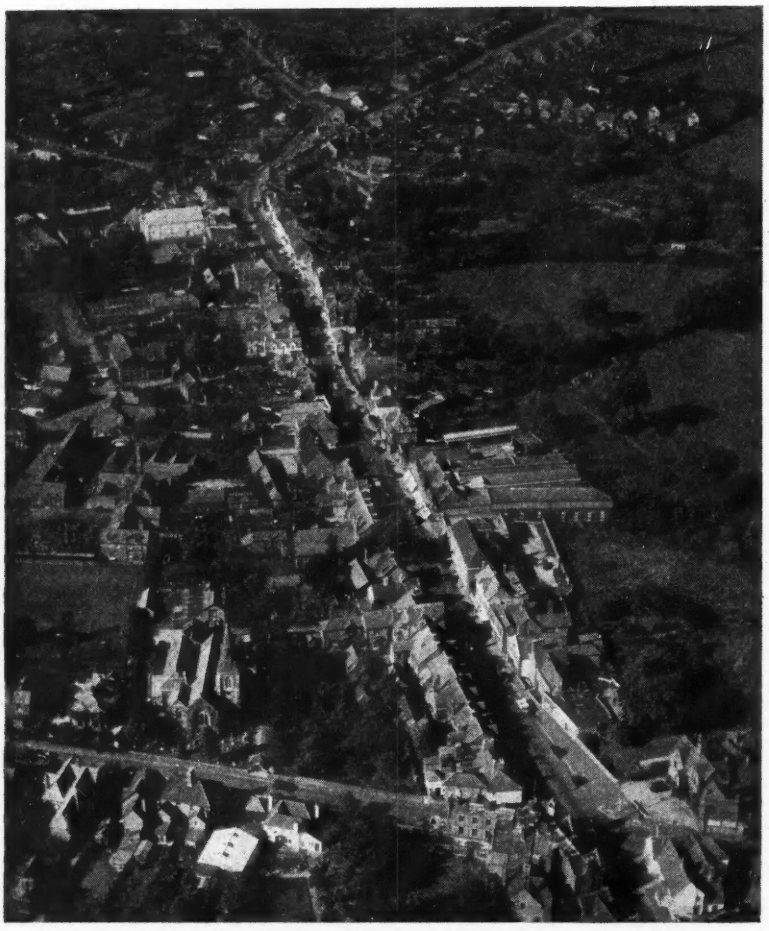
A small amount of living accommodation has also been provided at Farley Moor, adjoining the Corporation's offices at Farley Hall. This has been converted to a flat, four houses and a cottage for the staff. New office accommodation has also been provided at Farley Hall.

Future large-scale development at Bracknell will present the Corporation's staff with many knotty problems. A tour of the designated area reveals the extremely scattered and haphazard nature of much of the development which took place between the wars, and consequently large unobstructed tracts of country are hard to find. An additional difficulty on the south of the New Town is presented by the extremely sandy nature of the soil and sub-soil, and in particular by the great variability of bearing capacity over comparatively small areas. It is possible that low-density detached houses will prove most suitable in these sections where pine trees are at present holding the soil together.

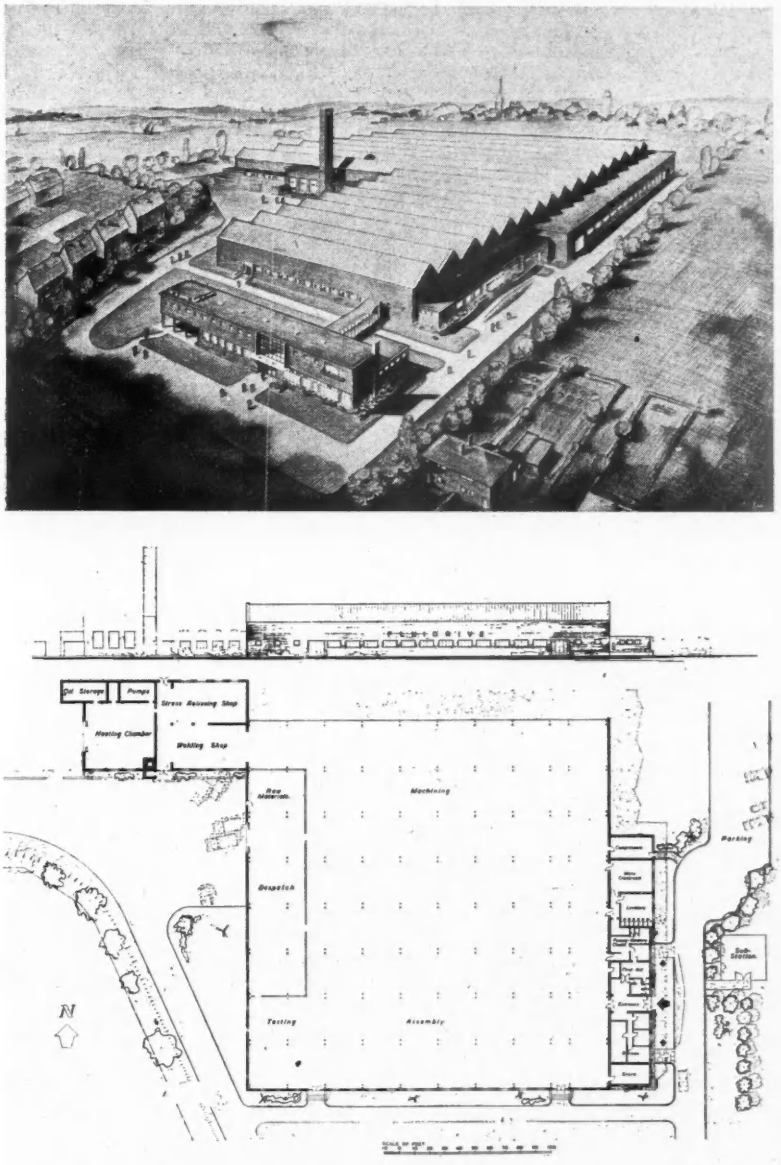
The first large-scale residential development, known as Priestwood No. 1, which is situated in the north-west of the New Town and is bounded on one side by the London-Ascot-Reading road, avoids these difficulties; the site generally lends itself well to building and it is hoped to achieve attractive layouts with little disturbance to existing property. The land is gently undulating, and contains many fine oaks, which will be carefully preserved. It is here that the 661 houses, already referred to, will be built.

The original layout for Priestwood No. 1 provided for 603 houses in terraces with 97 garages in groups, and for 58 semi-detached houses, with their own garages, a junior and infants' school and two nursery schools. The new type plans proposed are likely to increase the total number of houses in this area to nearer 700. A large modern house, Priestwood Court, with its grounds, will form the nucleus of a small neighbourhood centre having a dozen or so shops, a church, a public house and possibly other amenities.

The aim at Bracknell, as with the other New Towns, is to build a balanced community. With this in mind the Corporation consider that the houses that will



An aerial view of the existing town centre.



Plan and perspective of the factory for the Fluidrive Engineering Co., Ltd. The factory, part of which has already been built, has been designed by the Corporation's architects' department.

be required fall into four main grades: (*a*) Comparatively large and of high quality, (*b*) smaller but still comparatively expensive, (*c*) small, but above minimum standards, and (*d*) houses built to minimum standards. Houses in the first grade need not concern the Corporation for the present as there are already a number in existence, while those in the second category are expected to be built mainly under private licence, though the Corporation intend to build some for letting. The architectural staff have accordingly concentrated on houses in the third and fourth grades: those, respectively, built rather in excess of normal Housing Manual standards, for monthly letting, and those built to minimum standards for the lowest income groups, to be let on weekly tenancies.

As already mentioned, rising costs of building have seriously interrupted the starting of the Priestwood scheme for 661 houses, as it would obviously have been useless to build houses which would have necessitated rents being fixed at a figure beyond the reach of future tenants to pay. Accordingly, both grades (*c*) and (*d*) houses have been re-designed. Grade (*c*) will be semi-detached, each with a garage, and will comprise living-room, dining-room, kitchen, store and fuel store, three bedrooms and a bathroom and separate w.c.; a four-bedroom type may also be included. Water will be heated by a back boiler to the living-room fire and there will probably be radiators to provide background heating to the dining-room and landing.

The first 135 houses of the Priestwood neighbourhood will be grade (d). These will be to the minimum standards now permitted by the Ministry of Housing and Local Government. It is expected that while the present high building costs continue the houses for the lowest income groups will be to these or similar plans.

Now that house construction on the large Priestwood scheme can commence, there remains only the problem of an extension of the designated area for industrial purposes and the location of the site for sewage disposal works to be settled before the way should be clear ahead to erect houses, factories and other necessary buildings to maximum speed and, it is hoped, maintain it until the new Bracknell has been completed.

Schools are being provided by the Berkshire County Council, and it is hoped that building work on the first of these, the Priestwood primary school, will begin in September. Plans are also well in hand for the first of the two secondary schools which will be situated on the Northern Campus.

In all, provision has been made for six new primary schools (one for Roman Catholics) and the retention of an existing Church of England school at Easthampstead. Secondary school accommodation will consist of five new schools and the retention of Ranelagh School. The new secondary schools are to be grouped on two campus sites, one north of the High-street for three schools, and one south of the railway for the other two.

The first school in the Priestwood neighbourhood will accommodate 320 juniors. The site has an average fall of 1 in 15 from west to east and the buildings have been sited so that the flatter areas are used for playing fields and to retain the existing belt of trees.

The two parts of the school have been planned with all classrooms having a south or south-east aspect with a distant and pleasant view and are linked by the kitchen and dining-rooms. Load-bearing brick construction will be employed except to the steel-framed two-storey junior classroom block. The estimated cost is in the region of £89,000.

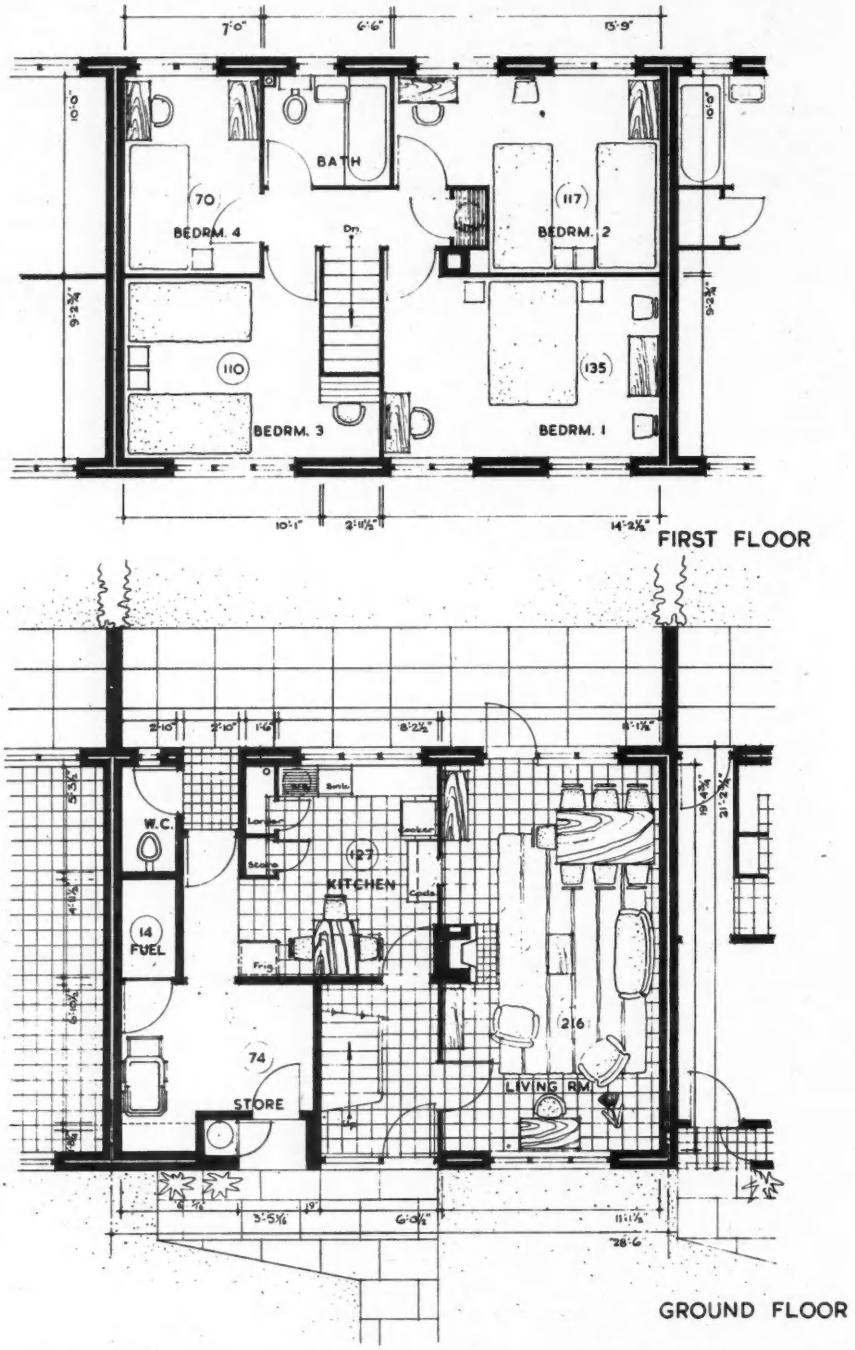
INDUSTRY

Warned by the experience of some of the older New Towns, whose industrial development has lagged behind the production of houses, the Corporation made an early approach to industrialists who might be interested in occupying factories in Bracknell, and nearly 200 have been interviewed. From these interviews it has been found that the site of the New Town is quite attractive to industry, and enough industry is already on the way to Bracknell to relieve any anxiety that might have been felt on the score of providing sufficient employment.

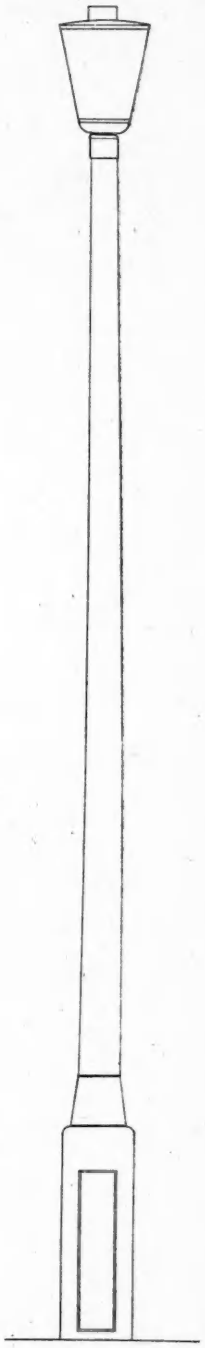
The first section of the first of the new

factories at Bracknell, that for the Fluidrive Engineering Co., Ltd., of Isleworth, is already nearing completion, and production has in fact started in some of the bays. The factory, which is being built on a 10-acre site on the Eastern Industrial Area, will have an ultimate area of 150,000 sq. ft., and will employ about 400. The building will be erected in three stages, the first of which totals 68,360 sq. ft. The Corporation's architectural staff are designing the building and supervising the contract. The contractors are John Laing and Son, Ltd. It is hoped to have 120 houses ready for the firm's staff by next March.

The next firm to obtain an industrial development certificate was Kent Bros. Electric Wire Co. and E. H. Phillips, Ltd., of Kew, who are erecting an 80,000 sq. ft. factory, also in the Eastern Industrial Area, which will employ 200 men and 100 women. Mr. William H. Scanlan, F.R.I.C.S., P.Inst.R.A., M.R.San.I., is the architect, and it is understood that the plans are now at an advanced stage. The Cabul Tool Co., Ltd., of Battersea, have plans well in hand for a factory in the Western Industrial Area, the architect being Mr. William Crabtree, F.R.I.B.A.



Ground- and first-floor plans of the four-bedroom intermediate or end type house ("universal aspect") for the first Priestwood scheme.



Lamp standard designed by the Corporation's engineers' department

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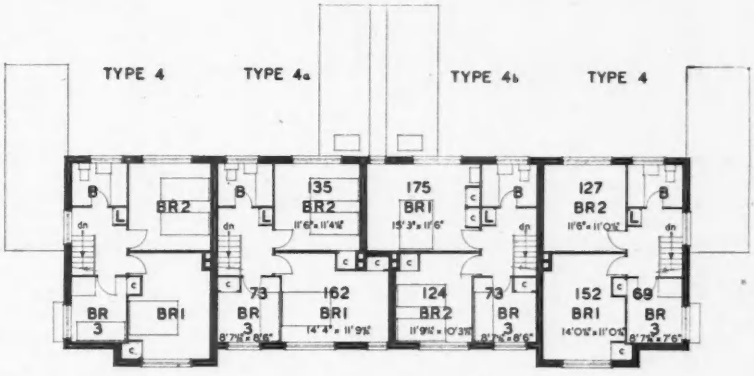
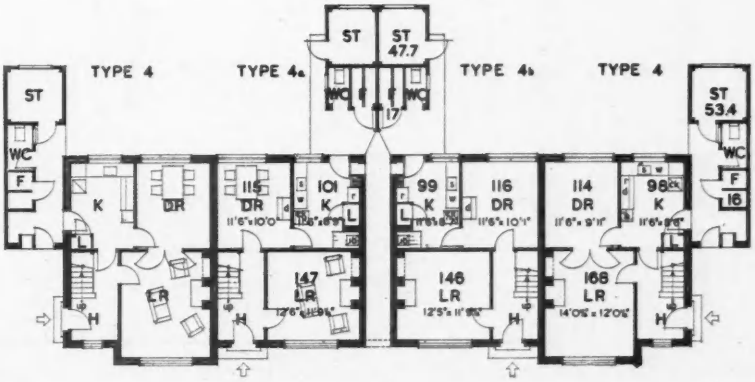
" ALPHA " HOUSING SCHEME

Three-bedroom houses on the Stoney-road site. Types shown are 4, 4a, and 4b. Louis de Soissons, A.R.A., and Partners, Architects.



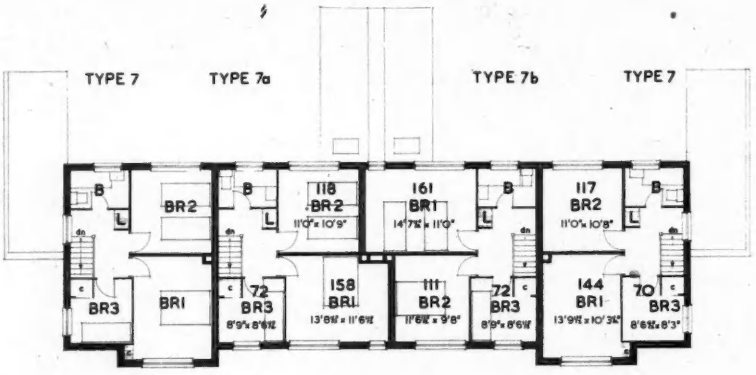
FIRST FLOOR



GROUND FLOOR

"ALPHA" HOUSING SCHEME

A terrace of four three-bedroom houses in Meadow Way. Types shown are 7, 7a and 7b. Louis de Soissons, A.R.A., and Partners, Architects.



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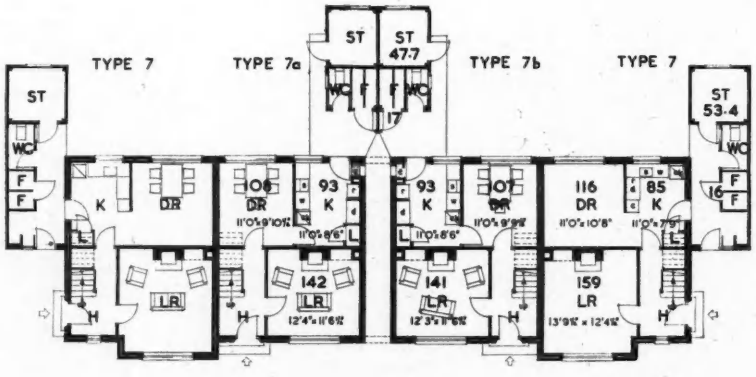


GROUND FLOOR

"ALPHA" HOUSING SCHEME

Three-bedroom houses on the Stoney-road site. Types shown are 7, 7a and 7b; for plans see previous page. Louis de Soissons, A.R.A., and Partners, Architects.

MINIMUM STANDARD HOUSING AT BRACKNELL. Plans of two-bedroom end house (left) and three-bedroom end or intermediate house types which, together with the four-bedroom type shown on page 292, will form the first group of 135 houses of the Priestwood neighbourhood. All three types have been designed by the Corporation's architectural staff and are suitable for any aspect.

THE PRIESTWOOD NEIGHBOURHOOD

The sketch on the left shows a part of the proposed development in the Priestwood neighbourhood. Its location is indicated in the layout of the neighbourhood, (below) by the arrow from "A," near the top of the picture.

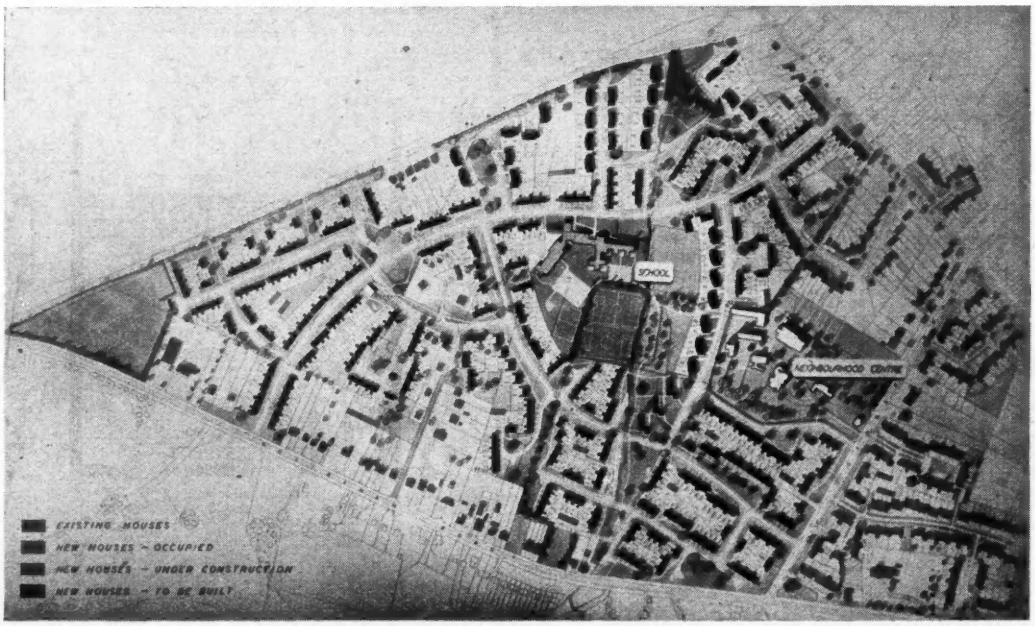
Each of the three firms so far mentioned are building their own factory on a site leased from the Corporation. Plans are also in a very early stage for a factory in the Western Industrial Area for Robert Legg, Ltd.

Engineering services are keeping pace with the needs of housing and industry. General agreement has been reached with the Berkshire County Council and the Ministry of Transport on the Corporation's proposals for new roads. Existing sewage services have been enlarged to cope with immediate requirements, and it is hoped that agreement will soon be reached on the location of new sewage treatment works. Work has started on drainage works for the disposal of surface water. Agreements which are as comprehensive as possible in present circumstances have been reached with the Southern Electricity Board and the North Thames Gas Board for the supply of electricity and gas. The Corporation are undertaking an experimental street lighting scheme on the Alpha housing sites, using different patterns of columns, lanterns and illuminants.

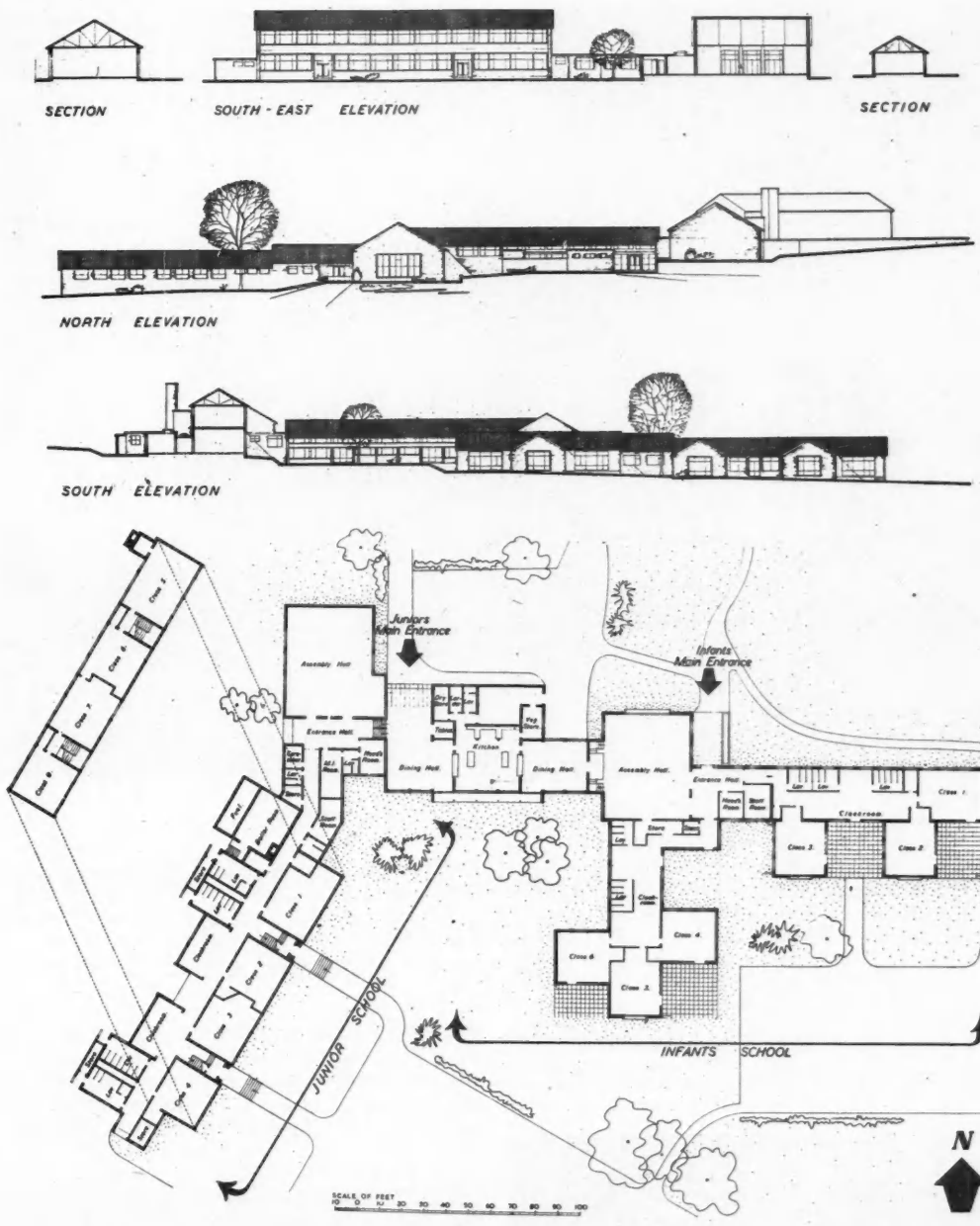
Members of the Corporation's staff who have been engaged on the projects described are as follows:

Architects' Department: Chief architect, E. A. Ferriby, B.Arch., A.R.I.B.A., A.M.T.P.I.; chief assistant architect, G. Hopkinson, B.Arch., A.R.I.B.A., A.M.T.P.I.; senior architect (housing), D. I. Pryde, A.R.I.B.A.; senior architect (industry), A. M. Mitchell, A.R.I.B.A., A.M.T.P.I.; assistant architects, A. Horsfield, A.R.I.B.A.; R. Lockyer, A.R.I.B.A., A.M.T.P.I., A.A.Dip.(Hons.); D. Ramsbottom, Dip.Arch., A.R.I.B.A.; R. Symonds, Dip. Arch., A.R.I.B.A., A.M.T.P.I.; and M. Williams, B.Arch., A.R.I.B.A. Chief quantity surveyor, L. C. Fowler, A.R.I.C.S., F.I.Arb.

Engineers' Department: Chief engineer, J. T. Kendal, A.M.I.C.E., M.I.Mun.E., G. B. Godfrey, A.M.I.C.E., A.M.I.Mun.E. (formerly senior engineer); chief assistant engineer, H. R. Poole, A.M.I.C.E., A.M.I.Mun.E.; engineers, R. E. Bartlett, A.M.I.C.E.,



Proposed development of the Priestwood neighbourhood.



Ground-floor plan and elevations of the Priestwood Primary School. J. T. Castle, A.R.I.B.A., A.M.T.P.I., Berkshire County Architect.

A.M.I.W.E., D. Brien, B.Sc., A.M.I.Mun.E., R. W. Palmer, A.M.I.C.E., A.M.I.Mun.E.

The following is a list of the main building and civil engineering contractors engaged on works :

Alpha 1 and 2 (72 dwellings), Unit Construction Co., Ltd. ; Alpha 3 (126 dwellings), Unit Construction Co., Ltd. ; Farley Moor (conversion into four houses and one flat), Boyd and Murley, Ltd., of Reading ; Farley Hall (office extension), Boyd and Murley, Ltd. ; Priestwood No. 1 (roads and sewers), Y. J. Lovell and Sons, Ltd. ; 39-in. surface water sewer (Alpha 3), Unit Construction Co., Ltd. ; Eastern Industrial Area—off site works and access road, John Laing and Son, Ltd. ; Bracknell sewage treatment works—extensions, Concrete Structures, Ltd. ; street lighting—Alpha 1 and 2, (*a*) Siemens E.L. and S. Co., Ltd. ; (*b*) General Electric Co. ; factory for Fluidrive Engineering, Co., Ltd., John Laing and Son, Ltd.

The following sub-contractors are employed on the Alpha housing schemes for which Messrs. Louis de Soissons, A.R.A., and Partners, are the architects, and the Unit Construction Co., Ltd., the main contractors :—

Tiling, Finnis, Nicholls, Ltd. ; plastering, Rooney and Sons, Ltd., Cheam, Surrey ; plumbing, L. T. McDonald, Carshalton, Surrey ; painting, William Carter, Central Chambers, Ealing, Middlesex ; electrical work, Morris Bros. of Camberley, Camberley, Surrey ; glazing, Faulkner Green ; woodblock floors, Stevens and Adams, Ltd. ; pitchmastic floors, Highways Construction, Ltd. ; fencing, Allen Fencing, Shepperton, Middlesex.

View from Cathays Park. Below : View from air.

OFFICE BUILDING FOR PRUDENTIAL ASSURANCE COMPANY, CARDIFF

DESIGNED IN THE COMPANY'S ESTATE DEPARTMENT

SIR PERCY THOMAS, P-P.RIBA, CONSULTANT FOR ELEVATIONS

THIS building, flatiron shape on plan, has recently been erected on one of the most prominent sites in the City of Cardiff, and has frontages to Kingsway, overlooking Cardiff Castle, and The Friary, overlooking the ruins of Greyfriars Priory. The nose of the building points across Cathays Park and the Civic Centre of the City in which are situated the Law Courts, City Hall and National Museum of Wales.

The design is in response to the wishes of the Cardiff City Council to maintain the general character and dignity of the buildings in the Civic Centre and the beauty of Cathays Park.

The building is occupied in part, on the ground floor and in the basement, by the offices of The Prudential Assurance Co., Ltd., and elsewhere throughout the building by the Ministry of Health, Ministry of Pensions, and Inland Revenue. A car park is provided in part of the basement, with ramps from Kingsway and The Friary, for use by the occupants of the building.

The building is steel framed on reinforced concrete foundations and retaining walls, with reinforced concrete hollow tile floors and roof.

The external walls are in brickwork, those to Kingsway and The Friary being faced with polished granite up to the ground-floor plinth level, with Portland stone above. In the central area the walls are faced with white gault bricks. The wall to the

View at rear from car-park.

south area is rendered to match Portland stone. The external faces of the lift gear and tank rooms are finished with faience tiles to match Portland stone. The roofs are insulated with cellular concrete and finished in asphalt.

The floors in the office portions and corridors have been laid with woodblocks and in the main entrances and lift halls with terrazzo tiles. The walls in the main entrance halls are finished with faience tiles. The lavatory blocks have tiled floors and walls. An entrance hall is shown on page 301.

The finishings internally are to utility standard and in the portion occupied by the various Government Departments the plaster walls and ceilings are painted in colour schemes which were prepared by the Ministry of Works.

Five fully automatic lifts serve the building. Mechanical ventilation is provided to the main lavatory blocks. Central heating and domestic hot water installations are fired by gas boilers.

View in ground-floor office.

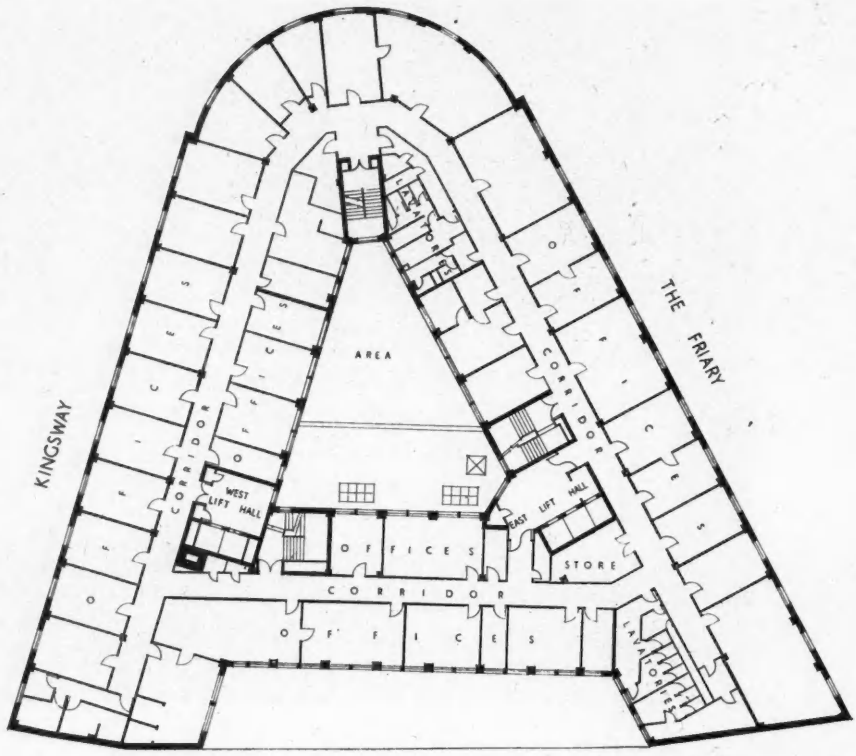
Windows throughout have rust-proofed steel casements, except the ground-floor windows to Kingsway and The Friary, which are bronze.

J. Pritchard Williams and Hunt were the quantity surveyors and J. F. Farquharson and Partners the consultant engineers. The general contractors were Messrs. A. N. Coles (Contractors), Ltd., of Sutton-road, Plymouth. The following is a list of sub-contractors :—

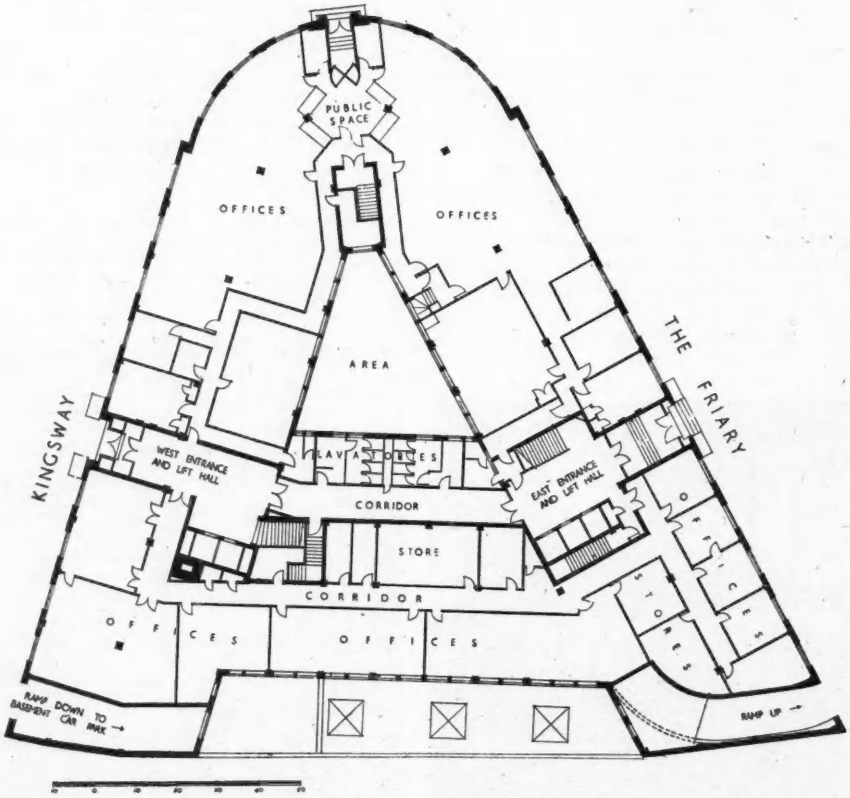
R. Alger and Sons, Ltd., heating and hot water ; Carter and Co. (London), Ltd., wall and floor tiles ; Celcon, Ltd., insulating concrete ; Dawnays, Ltd., constructional steel ; Ellis (Kensington), Ltd., drainage, gas and cold water plumbing ; Ellmore and Co., Ltd., joinery ; Fenning and Co., Ltd., granite ; J. W. Gray and Son, Ltd., lightning conductors ; J. and E. Hall, Ltd., lifts ; Horsley Smith and Co. (Hayes), Ltd., wood block floor ; the Kingsmill Metal Co., Ltd., bronze doors, lamps and balustrades ; The Kleine Co., Ltd., reinforced concrete floors ; Ozonair, Ltd., ventilation plant.

Shaws Glazed Brick Co., Ltd., faience work ; Terradura Flooring Co., Ltd., terrazzo lavatory partitions ; Universal Metal Furring and Lathing Co., Ltd., false ceilings ; Western Trinidad Lake Asphalte Co., Ltd., asphalt roofs ; F. H. Wheeler and Co., Ltd., electrical installation ; Luxfer, Ltd., metal windows ; Aygee, Ltd., glass ; Samuel Elliott (Reading), Ltd., revolving doors ; The Fireproof Shutter and Door Co., Ltd., steel doors ; J. A. King and Co., Ltd., stallboard lights ; Portland stone supplied by The Bath and Portland Stone Firms, Ltd.

The building was designed in the Estates Department of the Prudential Assurance Company (Mr. G. A. Coombe, M.C., V-P.R.I.C.S., Chief Surveyor), Sir Percy Thomas, P-P.R.I.B.A., being Consultant Architect for the elevations.



First-floor plan.



***BUILDING FOR PRUDENTIAL ASSURANCE COMPANY, CARDIFF:** Ground-floor plan.*

THE PLACE OF HOUSING IN TOWN PLANNING

Sir George Pepler's Address at a Town and Country Planning Summer School

Reproduced below is the paper by Sir George Pepler, C.B., Hon.A.R.I.B.A., P-P.T.P.I., F.R.I.C.S., on "The Place of Housing in Town and Country Planning," given at the Town and Country Planning Summer School, held under the auspices of the Town Planning Institute, at Bangor, from August 23–30.

THE first thing to be said is that, of course, housing has a very high place in Town and Country Planning. Indeed statutory town planning in Great Britain may be said to be in one sense the child of housing. The first Act to confer town planning powers upon local authorities was the Housing, Town Planning, etc., Act, 1909, and it was not until 1925 that we got an Act solely concerned with town planning. This Act was followed by the Town and Country Planning Act, 1932, which remained the principal Act until July 1, 1948, when the Town and Country Planning Act, 1947, came into full operation. We can therefore perhaps epitomise the evolution of planning practice in this country, within the available legislative machinery, as "Born of Housing, developed in Amenity, and maturing on Industry."

At the risk of repeating the obvious, it is worth recording the early evolution of town planning from housing. We are all aware of the frightful housing conditions brought about by the industrial revolution, during the last century, and if anyone wants reminding, let him read again Charles Dickens' *Hard Times*, published in 1854. Idealists such as Robert Owen (early nineteenth century) and Shaftesbury (1851) saw the red light, but it was not until important manufacturers, such as Cadbury (1879), Lever (1888), both original hon. members of the T.P.I., and, at the beginning of this century, Rowntree, Reckitt and Markham, who combined idealism with business acumen, entered the field, following the lead given by Sir Titus Salt (1853), that the importance of environment began to be fully understood.

These manufacturers cared for their workmen and appreciated that they would not only be more healthy, happy and contented, but also more efficient, if good homes were made available for them, in pleasant surroundings, and within easy reach of their workplaces. Hence, Bournville, Port Sunlight, Earswick, Hull Garden Suburb, and Woodlands Colliery Village. The work of these men showed that planning was practical politics, and by and large they were the backers of Ebenezer Howard, another practical idealist and also an original hon. member of the T.P.I., who in *To-morrow* (1898) expounded the idea of the garden city, "a town designed for healthy living and industry; of a size that makes possible a full measure of social life, but not larger; surrounded by a permanent belt of rural land; the whole of the land being held in public ownership or held in trust for the community."

HOWARD'S ACHIEVEMENTS

Howard not only produced the idea but inspired practical men to found "First Garden City Ltd." to build Letchworth (begun in 1903); later he was the founder of Welwyn Garden City, begun just after the First World War. These were the pioneers, plus a Birmingham group including Neville Chamberlain and John Nettlefold, whose work, focused in what are now the National Housing and Town Planning Council and the Town and Country Planning Association, led to the passing of the Housing, Town Planning, etc., Act, 1909, piloted through Parliament by John Burns, one of the first honorary vice-presidents of the Institute.

Thomas Adams, our revered first president, was an early disciple of Howard's and further developed the community aspects of housing, as a branch of town planning. Concurrently, Sir Patrick Geddes, another of the founders of the Town Planning Institute, and a pioneer of social survey as a prelude to planning, expounded the theory that the object of planning must be to secure the right relationship between Folk, Work, and Place. I had the privilege of sitting at his feet and of seeing him work out all kinds of combinations of the members of this trinity. Expounded by him on paper, it became a game of noughts and crosses, and if necessary to make a point, the old man would fold the paper, although no disciple would dare to suggest that it looked a bit like cheating!

The essential point was that these factors formed an indivisible trinity: folk must work in order to procure the means of livelihood, and the right place of the right kind, with the right environment, must be found for both workplaces and homes. Can one say that any one member of an indivisible trinity comes first? I think not, although it is a matter one could argue about almost indefinitely. My own impression is that, stimulated by Barlow and by the present emphasis on production, modern thought tends to give primary consideration to work, since unless one can earn one's living one cannot afford

OFFICE BUILDING FOR THE PRUDENTIAL ASSURANCE COMPANY, CARDIFF

An entrance hall (*see page* 298).

a home. Even in these days of high subsidies, somebody has got to find the rent. Indeed the whole fabric of the modern welfare state ultimately depends upon work, however much, up to now, we may have put the cart before the horse. But I must not be led into a digression! On the other hand, work is mainly a means to an end, an essential item of which is a good home, and this brings me back to housing and its essential place in town and country planning. The interrelationship is admirably described in the Introduction to the Report of a Study Group of the Ministry of Town and Country Planning, incorporated in *Design of Dwellings*, usually referred to as the Dudley Report, after the name of the chairman of the Central Housing Advisory Committee, a sub-committee of which prepared *Design of Dwellings*, 1942–44: "Town planning itself secures the proper relationships between the elements of the town plan in regard to social uses, services, topography, architecture and landscape. Among those elements, housing is of first importance. The town planning and the housing authorities are both concerned with the relation of different types of dwellings to each other, and to roads, open spaces, shops, factories and public buildings. The housing authority is concerned with housing accommodation in all its forms, as an essential public service; the planning authority is concerned with its place in a plan which embraces many forms of land use."

PRIMARY CONSIDERATIONS

Before areas for housing of various types can be either located or planned, the town planner must (*a*) estimate the amount of new housing of each type that is required and how much land must be provided for it, (*b*) discover what suitable land is available. In both these tasks he will seek the co-operation of a number of specialists, such as geographers, economists, geologists, sociologists, agriculturalists, and industrialists, and his conclusions will be conditioned by national and local policies, in so far as any have been formed.

HOUSING NEED

As all town planners well know, this is a most difficult estimate to make and one that is closely allied to employment prospects which are of national, regional and local consequence. Population trends, sex and age structure, which have an annoying habit of unpredictable fluctuation, have to be studied. Overspill, consequent upon the redevelopment of obsolete or obsolescent areas, must be calculated. The housing demand lists of the housing authorities have to be analysed and as far as practicable the overlaps weeded out. Also these lists and the overspill calculations must be adjusted in order to avoid counting twice over those now living in areas to be redeveloped and who therefore come into the preliminary overspill figures, but also have their names down on the lists as requiring new accommodation. It is of course a question of numbers and not of particular families.

Then employment prospects have to be studied, in consultation with the officers of the Ministries of Housing and Local Government, and of Labour, the Board of Trade, and local organisations representing industry and commerce. From these studies, which must embrace regional as well as national and purely local circumstances, factors and considerations, will emerge the amount of employment likely to be available in the area being planned, and the population it can be expected to support. National and regional policies will have great overall significance, but local factors must be taken into account with reference to local plans, and that is why it is important to consult the accredited representatives of those engaged in industry and commerce in the area.

The prospective amount of local employment, for males and females, will be the decisive factor in assessing the population to be provided for, it is obviously foolish to earmark space for people, and for their housing and all their other needs, unless means of livelihood, within their capacity and reach, are likely to be available.

The amount of land required for housing will be dependent upon the population to be provided for and the densities of development decided upon. Even if no increase of local population is envisaged, some land will almost certainly be required for the overspill from congested areas to be redeveloped, and some for new houses for those who cannot wait upon redevelopment.

DENSITIES

Densities for both new housing and redevelopment will have to be decided upon because they affect the amount of land required. This is not the occasion to discuss the problem in any detail and, at the moment of preparing these notes, the promised manual has not yet been issued by the Ministry of Housing and Local Government.*

It is of interest to note that this problem, together with the factor of daylight as affecting the space about dwellings, was discussed in the Report of a Study Group of the Ministry of Town and Country Planning, included in *Design of Dwellings*, to which I have already referred. Standards of density for self-contained residential neighbourhoods of various types are recommended, and for central redevelopment the maximum net residential density recommended is 100 persons per acre. "In very few cases and then only in large concentrated urban areas, should it be necessary to rebuild at 120 persons per acre." Mr. R. Nicholas, C.B.E., M.T.P.I., also clearly indicated in the Manchester City Plan how he arrived at the specific densities proposed, basing his conclusions upon basic human needs, each of which he translates into space requirements.

These densities are valid because they were based on human needs in and around the home. Another human need is food, which has to be grown on land, a commodity in short supply in this crowded island. So short that no one suggests that much more than half the food required by the present population can be home-grown. This raises problems of policy outside the scope of this paper and, indeed, extending outside this country to embrace the British Commonwealth. It is mentioned merely as another indication of the broad planning considerations to which housing is inevitably subject.

Decentralisation of homes and footloose workplaces from overgrown and overcrowded urban agglomerations is now accepted government policy, thereby providing elbow room for the rooted industries and major functions which must be centralised, also for the housing of those engaged in such industries and functions. Subject to the qualification that if the rooted industries are noxious or if subsidence is a serious local problem, homes and workplaces may have to be rather widely separated.

Reconstruction involves thinning out overcrowded areas and possibly some infilling of areas where the present size of garden is too large for individual family use and its upkeep beyond present family means. It is also likely to involve some rearrangement of present uses and changes over from, say, housing to commerce or industry, and possibly, although more rarely, *vice versa*.

THE SITING OF HOUSING AREAS

In considering this problem the town planner necessarily enters the field of competing claims for land use. This is well expressed in the official publication *Town and Country Planning*, 1943–1951: "Besides being one of the biggest users of land, housing is, perhaps more than anything else, the physical expression of planning. Well-planned housing must not only be properly related to the centres it serves, economic in cost, pleasant to live in and good to look at; it must also make the least possible demand on agricultural land and cause the least possible disturbance to the countryside. Unfortunately, perfect sites are to-day very few: usually there is some conflict of interest—the most convenient building land is often also the best farm land—and some degree of compromise is necessary."

The chief competitors with housing and all its concomitants of schools, shops, playing fields, etc., are agriculture and, in not a few cases, mineral extraction. It follows that some sites which the town planner would unhesitatingly select for housing, because of healthy subsoil, sunny slopes, convenience of the inhabitants, economy in drainage, water supply, transport, etc., happen to be either first-class agricultural land or contain rich deposits of some mineral, e.g., coal, gravel, ironstone, which are in great demand for industry, including building construction.

The balance of considerations in respect to mineral working is admirably summarised in the Ministry of Town and Country Planning Handbook *The Control of Mineral Working* (1951):

"The following aspects in particular should be examined:—

(*a*) The extent to which agricultural production would be interfered with.

(*b*) The extent to which other claims for the use of land would be prejudiced—e.g., for buildings, roads, etc.

(*c*) The extent to which the amenity of the area would be affected, and the limitations that would be necessary to minimise injury if permission were granted for mineral working.

* The Ministry informs us that publication of this manual has been postponed.—Ed.

"In the light of these and any other relevant considerations, a balance will need to be struck that reconciles the conflict as fully as possible. In some cases it may be possible to achieve solutions that meet all points of view; in others a decision may have to be taken that one of the conflicting demands on particular land is of greater importance than the rest. Careful judgment is needed in deciding the relative weight to be given to different claims. A decision that was likely to have an adverse effect on the essential supply of minerals for industry would need strong justification, but in considering this point it will sometimes be relevant to seek advice on the question of whether production in some other area could be increased and whether it provides a balancing factor."

Cake is meant to be eaten, but it is not possible to have one's cake and eat it simultaneously. Land taken from agriculture for housing is permanently lost to agriculture, except for the food grown in gardens and allotments. On the other hand, all land mined need not be permanently lost for housing. If steady and regular subsidence is all that the mining will produce, it may be possible to build on the surface, taking special precautions, while it proceeds. In some other cases, it may be practicable to hold back surface development until all or most of the mineral has been extracted or subsidence has ceased. The essential is working programmes mutually agreed between the mineral undertaker and the planning authority, in consultation with the housing authorities and all land surface users.

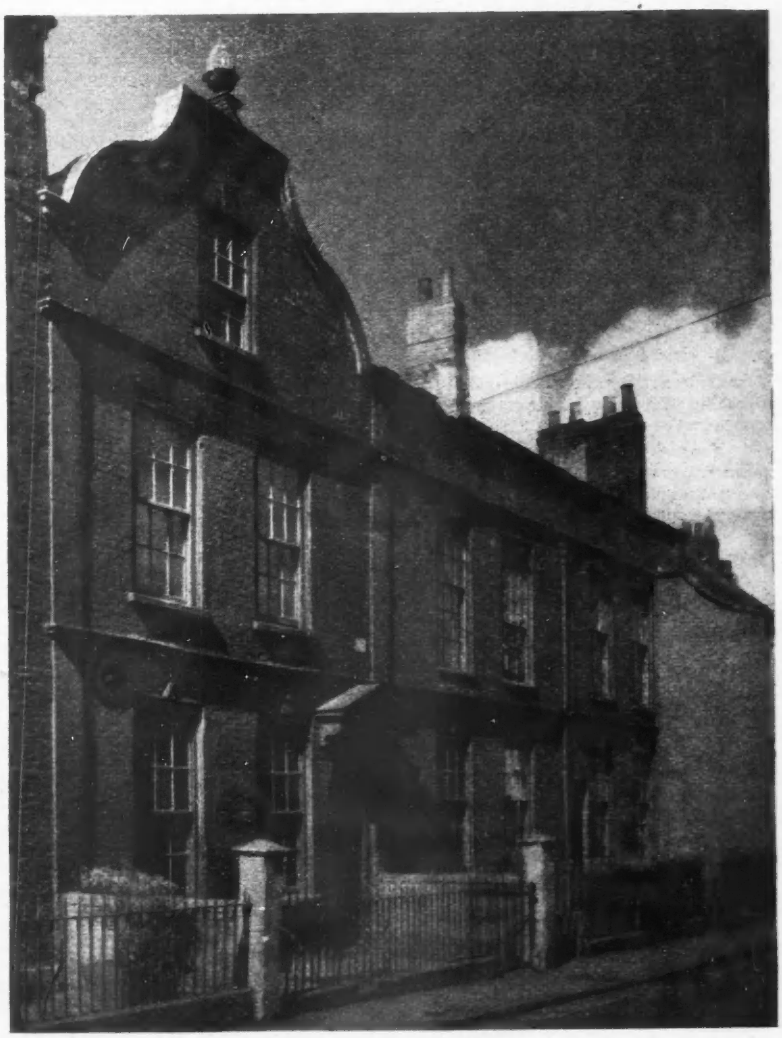
We all know the necessary components of good housing, whether it be the product of private or municipal enterprise. I think we shall all be agreed that the first consideration is to provide the sort of homes that the people we are planning for need and can afford, arranged on the right sites in a manner that will facilitate healthy and congenial communal life. The local housing authority represents the people and is therefore the spokesman for those who do not provide their own homes. The speculative builder *should* be experienced in the needs of those who want to own their own homes.

In planning to meet the housing needs of the people, there must obviously be close co-operation, all through, between the architect and the town planner. The planning of the dwellings is clearly the sole function of the former; the selection of areas for housing of various types, that of the latter, plus the general layout plan, designed in relation to (*a*) the Development Plan, by which the development of the site and its surroundings will be controlled, including such matters as density, possible allocation of sites for schools, shopping centres, community centres, parks, etc., and points of access to main highways; (*b*) the shape, nature and features of the site itself, and to economy in road works, sewerage and other services. Above all, the plan must provide the opportunity for good building, with favourable aspects and prospects. There is also scope for the landscape architect, as a third member of the team, in combining buildings, roads and gardens as a visibly harmonious whole.

CONCLUSION

In considering "The Place of Housing in Town and Country Planning," I have attempted, briefly, both to describe the evolution of enlightened public opinion and to draw attention to some of the fundamental town planning problems which must be considered, before any firm conclusions can be arrived at as to the size, location and planning of residential estates: problems such as (*a*) estimates of population in relation to means of livelihood; (*b*) the planning of a whole area in relation to national and regional circumstances, requirements and policies, with the object of securing the best use of the land of the area, in order to meet the many and varied needs of its population, present and prospective; (*c*) siting of housing in relation to places of employment, facilities for education, recreation, shopping, etc., taking into account physical and climatic conditions, economic availability of transport and public services, and the competing land claims of agriculture, industry, mineral extraction, etc.; (*d*) appropriate densities for both new development and reconstruction.

Some of the problems touched on are controversial and the discussion of any one of them might well occupy the whole time of one of our subject discussion groups I have purposely touched upon them lightly, merely to draw attention to some of the problems related to housing that emphasise the high place it occupies in town and country planning. Not to mention the headaches they give to the town planner headaches which he would find unbearable were he unable to rely upon the support and co-operation of specialist colleagues, and were he not inspired by the aim of affording the people he serves the best possible opportunities to live a full life on the land he has been entrusted to plan.



GUINEA-STREET, BRISTOL: These examples of 18th-century architecture, Nos. 10-12, are listed by the Council for the Preservation of Ancient Bristol as being specially worthy, yet a few doors away on the same side of Guinea-street other houses of this date have been demolished. The gap created will be filled with a scheme of Corporation flats and it would seem Nos. 10-12 may suffer a similar fate.

CHURCH ROOFING MATERIALS

3.—PITCHED ROOFS (a) THATCH

BELOW is a technical report on Thatch as a Roofing material, the first of four reports under the heading of Pitched Roofs, in a series by the Roofing Committee of the Central Council for the Care of Churches. The first of the reports, on Lead, appeared in *The Builder* of July 18, and the second, on Copper, in our issue of August 15.

GENERAL CONSIDERATIONS

In addition to (*a*) Thatch, the other materials considered under the heading of Pitched Roofs will be (*b*) Shingles. (*c*) Tiles. (*d*) Slates.

Materials for pitched roofs have characteristics in common, differing from those used on flat roofs such as metal and asphalt.

Common Characteristics.—The pitch of a roof increases as the size of the individual roofing unit decreases, from the extreme of the single unit of asphalt to the thousands of reeds of thatch.

Three main considerations are :—(*a*) the durability of each material ; (*b*) fixing and (*c*) repairing, varying with each material.

Pitched roofs are designed to resist :—

(1) Direct penetration of rain, wind and snow.

(2) Capillary attraction of water from the outside.

(3) Condensation on the inside.

(4) Heat loss from the building.

Consideration must be given to the following details in addition to the main roof slopes :—

1. *Eaves.*—A common fault is the insufficient overhang at eaves, which leads to bad rainwater disposal and increased chances of water blowing back to soak into the feet of the rafters ; once decay sets in at this point reinstatement may be considerable. The stone slate overhang in Yorkshire and the Lake District is traditionally less than that in the southern counties.

The eaves may discharge into an open gutter or with wide eaves direct into the soil below. Where this last method has been the practice over a long period on a particular building, the addition of a gutter may cause complications. The resultant drying of the soil round the building may affect the foundations of the walls. A good deal of trouble has been caused by gutters being added during Victorian times and the collected water drained by downpipes to soakaways.

2. *Fixings.*—Of the faults which cause trouble on pitched roofs, the most common is the use of iron nails or nails which decay easily. Decay having occurred, the slates or tiles will slip down the slope of the roof. Copper nails should invariably be used for fixing the slate or tile, but galvanised nails may be used for fixing battens.

A roof finish, no matter how good or how beautiful, will be wasted and its life considerably shortened if the fixings or hangings are not worthy of the material.

3. *Repairs and maintenance.*—Buildings covered with old tiles or slates, stone tiles and thatch derive much of their beauty and individual character from these materials. For this reason these roofings should be preserved or replaced with similar materials if necessary. Defects in tiled or slated roofs are usually due to failure of the nails, battens or roof timbers through decay. In such cases the roofing should be stripped and the old sound materials stored for reuse. Small sections should be done at one time and any deficiencies made up with specially made or quarried material. As a general rule, old tiles and slates from another building should not be used for repairs to old roofs, as it encourages the trade in old materials which has resulted in the loss of many old buildings in the past.

When repairing a pitched roof, it is essential that the pitch be considered and the material used be suitable to that pitch as dictated by traditional practice.

Insufficient lap of one course over another is often found. This can only be corrected by relaying. Pointing the tiling or slating with cement is a bad practice and should never be carried out.

Ventilation of all roof timbers is of paramount importance to obviate wet-rot, dry-rot and beetle. Excess of moss on tiled, stone tiled and slated roofs is harmful and should be removed.

Lichens, however, do not hurt and take very long to grow and add to the beauty in colour. Ivy and creepers must never be allowed to grow over roofs. If they do, the tiles and slates will very soon lift and create leaks. Such plants should be ruthlessly cut down and not removed until the plants are dead, when great care must be taken.

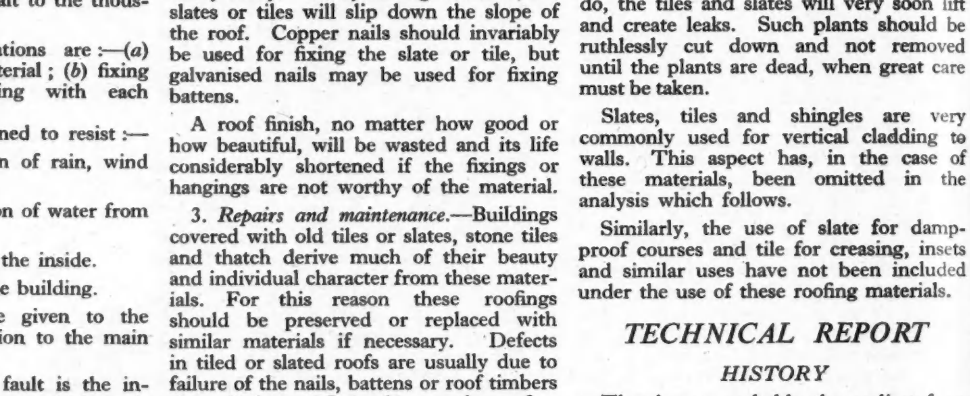
Slates, tiles and shingles are very commonly used for vertical cladding to walls. This aspect has, in the case of these materials, been omitted in the analysis which follows.

Similarly, the use of slate for damp-proof courses and tile for creasing, insets and similar uses have not been included under the use of these roofing materials.

TECHNICAL REPORT

HISTORY

Thatch was probably the earliest form of roofing in this country. There is evidence that prehistoric dwellings were



Hales Church, Norfolk, with its thatched roof. The church was repaired under the auspices of the Society for the Protection of Ancient Buildings.

The considerable number of Norfolk and Suffolk churches still roofed with reed speaks well for the quality of thatching in these counties. Other examples besides Hales are the churches of Heckingham, Potter Heigham, Fritton, Herringfleet, Henstead and Ashby.

roofed with turf, and with a primitive form of thatch. During the Middle Ages, and into the eighteenth century, thatching developed into a craft and a high standard was reached. The best work was done in the Southern and Eastern counties; in the north thatching was always more primitive.

In the nineteenth century thatch began to fall out of favour, except for the poorest type of building. This was largely due to the increased and cheap production of Welsh slates, and roofing tiles. The introduction of threshing machinery, which damaged the straw far more than the old hand threshing had done, caused a decline in the quality and durability of thatch, which aided the reaction against it. Thatching, essentially an individual craft, suffered greatly from the general decline in craftsmanship following the Industrial Revolution. The danger of fire in thatched buildings (often greatly exaggerated) also told against it.

Thatching, however, never died out, although at the beginning of the last war few new thatchers were being trained.

Since then, there has been a considerable revival encouraged by the Rural Industries Bureau. Thatchers' associations have been formed in the various counties, and thatching instructors, appointed by the Bureau, are responsible for training new recruits and encouraging a higher standard of work. This is most necessary if thatching is to hold its own, for a badly thatched roof will always be unsatisfactory and give the material a bad name.

MATERIALS

Various materials have been used for thatch. Wheat straw was the most common and the straw of rye, barley, or oats was also used. Besides these, linseed and heather have been used, heather particularly in Scotland. In Norfolk, the marsh reeds gave a very durable roof and these reeds have been used extensively for a long period of time. Sedge is used on the Cambridgeshire fens and this material is nearly always used for capping Norfolk reed thatch.

When wheat was threshed by hand, the straw was practically undamaged and it could be laid in the same manner as Norfolk reed, although the stems were considerably shorter. The introduction of threshing machines resulted in the straw being bruised and it could no longer be laid "reedwise." A different technique was therefore evolved for thatching with "long straw"—so-called because on the finished roof about 4 to 5 in. of the individual straws show, as compared with 1½ to 2 in. of reed, where the "butts" form the face of the thatch.

Long straw is far less durable than reed, is more easily attacked by birds and the danger of fire is greater. It is easy to see, therefore, why thatching declined, except for the Norfolk reed thatchers, who maintained the standard of their work. The considerable number of Norfolk churches still roofed with reed speaks well for the quality of thatching in this county.

The West Country has also been traditionally a thatching area and in Devon very little long straw work is seen. The invention of the "reed comber" has again made possible really durable thatch roofing in this area. The "reed comber" is an additional machine fixed to the normal threshing machine, which passes over the unbroken "reed" leaving the chaff, flog, grain, etc., to pass down into the thresher. The "reed" is passed over a belt and automatically tied into bundles, ready for the thatcher.

"Combing" is more costly than ordinary threshing and farmers have not easily been persuaded to risk the extra expense. They can, however, obtain a better price for reed than for trussed straw, and the practice of "combing" is gradually spreading eastwards from Devon, Dorset and Somerset into Hampshire and Wiltshire. The Rural Industries Bureau is encouraging this process, but it is realised that only the smaller farmers will be prepared to "comb." On the larger farms combine harvesters are being increasingly used, and with these the straw is useless for thatch.

The Bureau, through its thatching instructors, is training "long straw" thatchers in the use of reed, and it is probable that long straw will eventually die out.

Norfolk reeds grow in the marshes and may be from 6 to 8 ft. tall. They are cut when a year old and taken by boat to the nearest hard road. The reed is tied into bundles with reed rope. Six bundles form a "fathom," of which the combined circumference is 6 ft., and 600 bundles are called a "long hundred."

Norfolk reed was introduced into Cambridgeshire and Huntingdonshire about 35 years ago. Owing to transport charges the cost of thatching in reed becomes very high when long distances are involved between the reed beds and the building.

Material for thatch should be carefully selected. Long straw should be damaged as little as possible. Combed wheat reed should be cut three days before the straw is ripe and should still have a green-yellow tint. If the ears are bent over, the straw will be too dead for thatch. One of the best wheat for making "reed" is Red Standard.

Norfolk reed should be straight and firm. All the reed for one roof should have been grown in the same depth of water, or the colour may vary, giving a patchy appearance. This, however, will tone down in a few months.

AESTHETICS

Thatch, as a traditional roofing material, blends well with the countryside and fits in well with most other building materials.

Since the war it has been used for a number of new housing schemes, both in East Anglia and the West Country.

Thatching technique varies considerably in different parts of the country. The rather hard, spiky appearance of East Anglian thatch is very different from the softly rounded roofs of the West Country.

Some years ago, before the increased use of combed wheat reed, there was a demand for Norfolk reed in the Southern and South-western counties, to replace the less durable long straw. Work by Norfolk thatchers in these areas sometimes looks strangely out of place, and this transplanting of local styles needs careful handling.

The training of West Country thatchers in the use of reed will probably overcome this difficulty, as they would work in their own traditional style.

Thatching gives great scope to the individual craftsman. It is possible for anyone who is familiar with thatch to pick out the work of different thatchers in any area.

While dealing with the aesthetics of thatch, the need for proper maintenance and for good quality work must be stressed. Nothing looks more sordid than dilapidated or badly laid thatch. Nothing is more expressive of rural prosperity than a new, well-thatched roof, carried out by a real craftsman, and these thatched buildings will retain their character and appearance for many a year.

DURABILITY

The durability of a thatched roof will depend largely upon the siting of the building and the quality of the materials and workmanship, but the following may be taken as a guide :—

A long straw roof will last from 10 to 30 years, a combed wheat reed roof from 35 to 60 years, and a Norfolk Reed roof from 40 to 80 years. During this time the roof will need re-ridging once or twice and minor repairs may be necessary.

The danger of fire is one of the greatest drawbacks to the use of thatch, but this is often misunderstood. Thatch is not, of course, suitable for use in towns, although the bye-laws were waived in Norwich so that it might be used in war damage repairs to existing thatched houses. In country areas, however, if proper precautions are taken, the risk of fire is small.

Thatch is rarely ignited by sparks falling on it. The greatest danger is from faulty electric wiring, or from faulty chimneys, all too common in old houses. Care should be taken to see that the brickwork and parging are intact, and the use of asbestos flue liners is a wise precaution. A fireproofing solution, known as "Faspos," is manufactured by I.C.I. The thatch should be dipped in this before being laid. An alternative solution, recommended by the Rural Industries Bureau, is described at the end of this article.

As a further precaution, asbestos felt may be fixed under the rafters.

Another suggestion has been made, something on the lines of a sprinkler system. A dry riser, perforated along its length, is laid along the ridge. In case of fire, and at intervals during hot, dry weather, the water can be turned on, soaking the surface of the roof. During the war it was proved that a thatched roof was more proof against incendiary bombs than a slated or tiled roof. Owing to

the resilience of the roof the bombs would slide off and burn out harmlessly on the ground.

Considerable damage may be caused to thatched roofs by birds. This is less likely in the case of reed roofs, provided that the thatch is tight and dense enough, but may be serious in the case of long straw. As a precaution, thatched roofs are sometimes covered with wire netting. This is unsightly, and is disliked by firemen, as the thatch cannot be pulled off the roof in an emergency. Wire is a good precaution at eaves and verges.

CONSTRUCTION OF ROOFS FOR THATCH

When thatch is to be used, the roof should be designed for thatch from the start, and, if possible, the thatcher consulted before any timbers are fixed. This may save a considerable amount of money and trouble. To design a roof for tiling and then decide at the last minute to change to thatch, will probably result in unexpected difficulties.

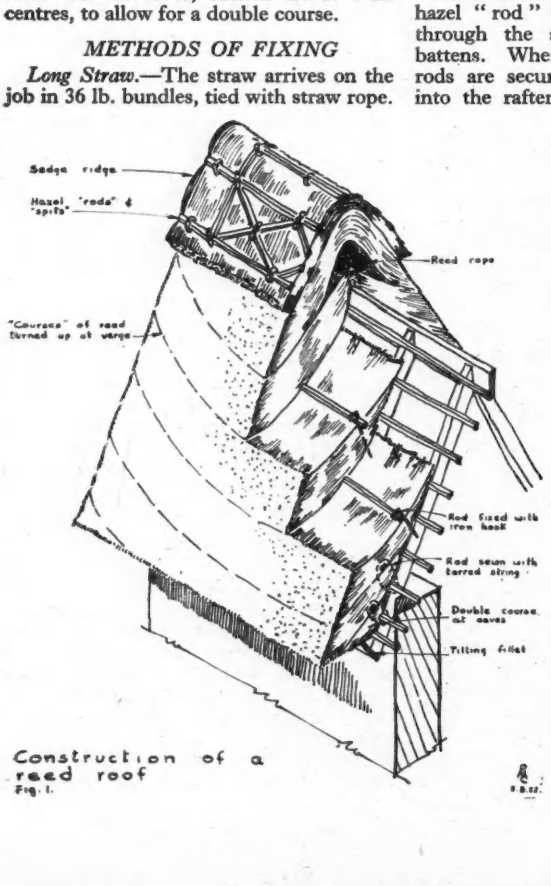
Thatch needs considerably lighter timbers than tiling, and rafters can be unsquared and green. In the West Country, larch poles are often used. These require no timber licence.

The minimum pitch for long straw is 50 deg., for reed roofs 45 deg. Pitches of from 55 to 60 deg., common in the Middle Ages, are more satisfactory from the point of view of weathering, but are difficult for the thatcher to work on.

Rafters are spaced at about 2 ft. centres. On these, battens are fixed, at 9 in. centres for straw, or 12 in. centres for reed. At the eaves, battens are at 6 in. centres, to allow for a double course.

METHODS OF FIXING

Long Straw.—The straw arrives on the job in 36 lb. bundles, tied with straw rope.



Construction of a reed roof
Fig. 1.

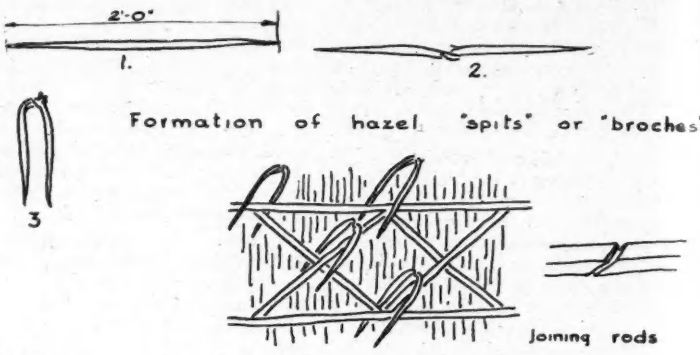
The thatcher unties the bundle, and forms the straw into "yelms,"—small flat bundles corresponding to slates. The butt ends are pulled out to form a bevel, following the pitch of the roof, and allowing 4 to 5 in. of the straws to show. The thatch is laid on the roof in courses, with a double course at the eaves. At the verges the "yelms" are laid at an angle, so that the actual verge is formed by the butt ends of the straw.

Two methods of laying are used—"coursing" and "stulching." In "coursing," one course is laid right along the roof, followed by the next, etc. In "stulching" one width of about 3 to 4 ft. is completed right up the slope. This saves moving the ladder so often, but may result in vertical cracks showing down the slope.

Each course is held in place by a split hazel "rod" (Fig. 1) which is secured through the straw to the rafters and battens. Where there is no ceiling the rods are secured by iron hooks, driven into the rafters. For fixing new thatch on to an old roof, the rods are fixed by hazel "spits." These are 2 ft. long, split to size and sharpened at each end; twisted in the centre and bent to form a staple (Fig. 2). They are driven into the thatch with a wooden mallet (Fig. 3). The roof is completed up to the ridge, and several thicknesses of straw rope are laid along the ridge to build it up. These are covered with the final course of straw, laid over the ridge. If a "cut ridge" is required, a further course is laid and secured with rods and spits laid in a pattern, known as "cross spitting." The lower edge is cut square, or in a pattern.

In forming a ridge the aim is to avoid a flat surface on which water can lodge.

Finally, the roof is raked down to remove loose straw and the eaves and verges are trimmed with a thatcher's knife (Fig. 3).



Details of "Cross Spitting"
Fig. 2.

In long straw work, cross spitting is also carried out at eaves and verges and around dormer windows, to prevent the thatch lifting in a high wind.

The straw should be well wetted before being laid, to enable it to be more tightly packed.

Norfolk Reed.—The reed is ordered by the "fathom," and the bundles are used whole. In reed thatching, only 1½ to 2 in. of each reed shows. The reeds are not cut, but are beaten into place with a "leggett." This is a type of mallet, with a flat, square, wooden head, covered with metal ribs, or with horse nails (Fig. 3).

The first course of reed is laid on a tilting fillet, so that there is some spring in the thatch. The principle of fixing is similar to straw, and if the work is well done, the thatch should be very firm and closely packed (Fig. 1).

Ridges are formed in sedge or straw, as the reeds cannot be bent.

The rods should be fixed high up on each course or when the roof begins to wear, cracks will appear along the courses.

Hazel "spits" are known as "broches" in Norfolk and "rods" as "liggers." When looking up the slope of a good reed roof, only the butt ends of the reeds should be visible.

Combed Wheat Reed.—The reed arrives in bundles and is laid on in whole lengths. The fixing is similar to that of Norfolk reed, but iron hooks are never used, the thatch being stitched down on new work, or secured with spits (known as "spars" in the west) on old thatch. The leggett is made of wood, cut into ridges, as metal would damage the wheat stems.

Cut ridges are rare in the West Country, Ridges are of straw or sedge.

Underlays for Thatch.—Generally, thatch is laid on rafters and battens as described. Sometimes twigs are interlaced between the battens, to form a foundation.

In Norfolk, reed flaking may be carried out. Reeds are woven, basket fashion, over the rafters instead of battens.

In the West Country, a coat of long straw, known as a "waistcoat", may be laid under the reed.

DETAILS OF DESIGN

Ridges.—These are formed of sedge or straw. Cut ridges, with ornamental cross

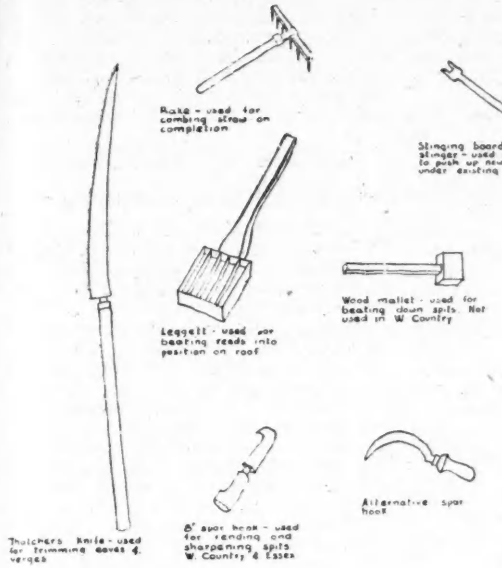
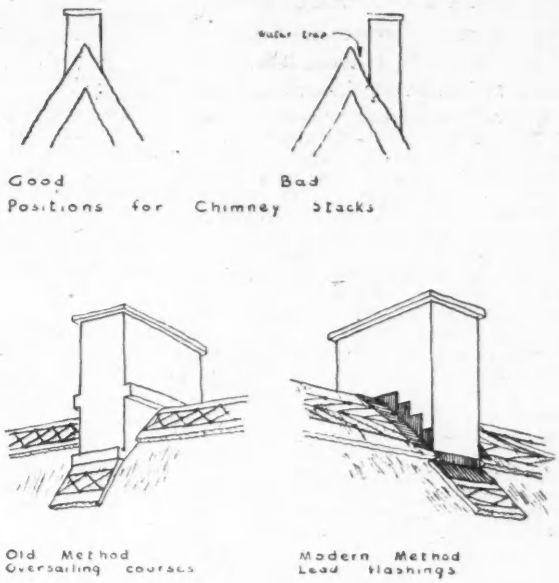

Rake - used for combing straw on completion
Stinging board or stinger - used in repairs to push up new straw under existing
Leggett - used for beating reeds into position on roof
Wood mallet - used for beating down spits. Not used in W. Country
Thatchers knife - used for trimming eaves & verges
8" spar hook - used for rending and sharpening spits W. Country & Essex
Alternative spar hook
THATCHING TOOLS
Scale of feet
0 1 2 3 4

Fig 3.



Chimney stacks in thatch roofs

Fig 5

spitting, are a feature of East Anglian work, with the ends tilted up. In the West, cut ridges are rare, and the ends are generally hipped down, producing a softer effect.

Valleys.—Should be well "swept" to avoid a water trap. The pitch must be watched. A secret lead gutter may be laid under the thatch.

Hips.—The thatch is worked round the hips and in long straw work is generally secured with rods and spits.

Eaves and Verges.—A good overhang is necessary, to throw the water clear. Occasionally the eaves are finished with a few courses of tiles or stone slates to enable a gutter to be fixed, but this does not improve the appearance.

Dormers.—Vary considerably. Different thatchers have their own treatment. The most common types are "gable" and "eyebrow" dormers (Fig. 4).

Chimney Stacks.—Should be placed to avoid forming a water trap, on the ridge rather than part way down the slope. For flashings, oversailing courses are formed and the thatch tucked underneath. Now, lead flashings are generally used. These are efficient but unsightly. Cement fillets are bad, as they pull away in time (Fig. 5). Vertical abutments generally are treated in the same way.

Guttering.—Very rarely used. Dripping eaves are generally formed. The drainage of the foundations must be considered.

Parapets.—Verge parapets are occasionally found in coastal areas, to protect the thatch from high winds. They are more common on West Country medieval buildings.

REPAIRS TO THATCHED ROOFS

There are obvious signs when a thatch roof begins to need repair. The "spits" stand up on the ridge, the ornamental rods work loose, cracks appear along the courses of reed roofs, verges and eaves wear thin, and in bad cases the fixing rods begin to show.

Re-ridging is required at fairly frequent intervals and this is quite a simple matter.

Bad patches, perhaps attacked by birds, can be repaired, but if there are many such patches, it is better to put on a new coat of thatch.

Norfolk reed thatchers generally insist on all the old thatch being stripped off before the new work is started. If this is not done the reed may start slipping in a few years. In other cases, old thatch can be left on provided it is sound. Enough should be stripped off at eaves and verges to give a sound, firm finish. The new thatch is then fixed with rods and "spits" ("broches" or "spars").

The line of the finished roof should be quite flat, neither convex nor concave.

Insulation.—The insulation value of thatch is excellent and no further treatment is needed.

Ventilation.—As with all roofs, the roof space should be ventilated.

COSTS—1952

Long straw, £6 to £8 per square.
Norfolk reed, £15 to £20 per square.
Combed wheat reed, £10 to £14 per square on new roofs. About £6 per square on existing thatch.

In comparing costs with that of tiling, the saving in roof timbers should be considered.

Recipe for the fireproofing of thatch (recommended by the Rural Industries Bureau).

28 lb. sulphate of ammonia, 14 lb. carbonate ammonia lump, 7 lb. borax lump, 7 lb. boracic acid, and 14 lb. alum lump dissolved in 50 gals. of water will proof five squares (500 sq. ft.). Dip the straw or reeds in a tub filled with the solution and place on drawing board fixed above tanks to drip back into tank for three hours. Then set out to dry and test for burning. If the mixture is to be used on the existing thatch, a long rod must be used to tap the liquid into the thatch, otherwise the liquid would merely run off the thatch.

Eyebrow dormer in reed

Valley dormer in long straw

Typical Dormers in Thatched Roofs

Fig. 4.

METAL CORROSION

Tests on Ornamental Chain

By J. F. Stanners, B.Sc.

(*British Iron and Steel Research Association*)

ALONG the riverside promenade at Derby there is an ornamental chain which has rusted in an unusually patchy manner. An examination undertaken to find out the reason for this led to a result which may well be of interest to users of wrought iron chain and similar products.

The condition of the chain was first brought to the attention of the Atmospheric Corrosion Sub-Committee (of the British Iron and Steel Research Association) in 1950 by its chairman, Mr. T. H. Turner, who noticed that different types of link in the chain were not corroded to the same extent.

The chain is made up of alternate rectangular and six-sided links with an ornamental double pyramid at the centre of each rectangular link. As is shown in the accompanying illustration, the rectangular links are badly corroded but neither the double pyramid at the centre of these links nor the six-sided links have been appreciably attacked.

Inspection

A detailed inspection was arranged through the courtesy of the Derby Borough Architect, Mr. T. W. East, F.R.I.B.A., who also kindly supplied information about the history of the chain.

The maker is unknown, but the chain was supplied and fixed in 1933 and was reputed to be of wrought iron. It was said to have been "dipped in the black" when made and not to have received any further treatment. However, when the chain was inspected in 1950, the remaining paint was found to be dull black only on the surface while scraping revealed a silver or grey layer beneath. The paint was still present on most of the ornamental double pyramids and to a less extent on the six-sided links.

The failure generally was by wide shallow corrosion pits through breaks in the paint. The orientation of the links did not seem to have affected the degree of corrosion but, as is usual, this was particularly severe at their surfaces of contact, where they were badly worn away. The wear was particularly noticeable near the supporting posts. The inner faces of the links were more corroded than the outer faces. Iron or steel hoops round the supporting posts, apparently of the same age and painted in the same way, were in good condition.

Metallurgical Examination

Samples of the links were examined metallurgically by Mr. C. Dinsdale at the British Railways Laboratory at Doncaster. The six-sided link and its ornamental double pyramid were protected by paint over about 80 per cent. of their area. The remainder of their surfaces was either bare unrusted metal or had rusted and pitted considerably. In contrast to this, less than one per cent. of the paint was left on the rectangular link, which had rusted and pitted much more severely.

The paint coating was easily detached both from the links and from the pyramid, generally revealing a smooth, uncorroded surface. The chain had received several coats of paint, the thickness of the film being 7-10 mils. Three layers of paint were clearly visible. The outermost coat was a dirty black; beneath this there were layers of a cream paint and of a white paint but there was no evidence of red-lead priming paint.

Chemical analysis of the three components of the chain revealed that it was not made of wrought iron at all. The rectangular link was of dead mild steel; the six-sided link, blackheart malleable cost iron; and the pyramid, mottled-grey cast iron. The following table shows the percentages of the different chemicals in the three components:—

Chemicals	*Rectangular Link*	*Six-sided Link*	*Pyramid*
Carbon	0.06	1.47	3.13
Manganese... ...	0.28	0.25	0.29
Silicon	trace	0.74	1.38
Sulphur	0.056	0.105	0.149
Phosphorus ...	0.042	0.040	0.71

Conclusions

The main result of this investigation is to show that although the chain was reputed to be wrought iron, there is no wrought iron in it. * Each of the three components has been made from a different class of iron. The rectangular links, which have corroded, are of mild steel, whereas the six-sided links and the pyramids, which have resisted attack, are of malleable cast iron and of ordinary cast iron respectively.

This difference in the materials used for the three parts of the chain might not have proved important had the paint been maintained in good condition. It seems, however, that, although the chain has received at some time several coats of paint, there has been little or no maintenance painting. This has permitted the differences between the materials to come into play.

It is well known that malleable cast iron is useful for components that are continuously exposed to the atmosphere, such as agricultural machinery, and that cast iron is often less corroded in the atmosphere than mild steel. This difference in corrodibility may be connected with the better adhesion of the paint film to malleable and ordinary cast iron than to mild steel carrying mill-scale. Where the paint is destroyed, the type of rust formed on the two cast materials may act more effectively in stifling further attack than does that formed on mild steel.

*When exposed in the bare condition, wrought iron is markedly more resistant to atmospheric corrosion than is ordinary mild steel. There is, therefore, some potential advantage in using wrought iron for such purposes as ornamental gates. It is clearly desirable in such cases to make sure that the material is, in fact, wrought iron.

Detailed examination of this link revealed the reason for the patchy rusting effect.

CODES OF PRACTICE

Revised Code on Loading

THE Council for Codes of Practice has now issued a revised edition of Chapter V, "Loading," of the Code of Functional Requirements of Buildings (price 4s.). This Chapter was published in 1944 and, in accordance with the Council's declared policy, has now been reviewed, the responsible committee consisting of representatives of the Institution of Civil Engineers, the Royal Institute of British Architects, the Institution of Structural Engineers, the Incorporated Association of Architects and Surveyors, the British Standards Institution and the Department of Scientific and Industrial Research.

The revised document shows important changes in the loading recommendations. These changes affect the following matters:—*Dead Load*—Provision for partitions not shown on building plans. *Imposed Loads (other than wind loads)*—Classification of floors for loading purposes. Loading of corridors, stairs and landings. Permissible reduction of total imposed floor loads on columns in multi-storey buildings. Imposed roof loads. *Wind Load*—Wind loads on walls, roofs, wall panels, wall and roof sheeting and fastenings. General stability calculations for the effects of wind on a building as a whole.

Appendices afford considerable guidance on interpreting the recommendations of the Chapter and on the principles adopted in the calculation of wind pressures and their effects. Illustrations include a set of diagrams showing the results of wind-tunnel tests. These take the form of graphs which indicate the distribution of wind pressure over the walls and roofs of buildings of typical cross-section.

Mastic Asphalt Roofing

THE COUNCIL for Codes of Practice for Buildings has now issued in final form Code 144.201, "Mastic Asphalt Roofing (price 5s. 6d.). The Code has been drawn up by a Committee convened by the Royal Institute of British Architects on behalf of the Council, and is a revision, following comments received, of the draft code previously issued.

The Code gives specifications for mastic asphalt and for the various accessory materials generally used in conjunction with it. It includes recommendations on the preparation of various types of sub-structure, on the thickness and number of coats required for varying conditions and on methods of protection from solar heat. Advice is given on the preparation for, and technique of, laying the mastic asphalt.

The Code includes a large number of diagrams illustrating methods of laying mastic asphalt roofing and arrangements for certain closely associated damp-proof courses.

The Code carries the usual warning that, during present abnormal conditions, it may not be practicable to carry out all the recommendations.

Copies may be obtained from the British Standards Institution, 24/28, Victoria-street, London, S.W.1.

INSTITUTE OF BUILDERS

The Fostering of Education

AT the Annual General Meeting of the Institute of Builders, held on July 30, the new Council was elected. Mr. Harold H. Ridge (Vice-President) was elected President for the year 1952-53. In supporting his nomination, Mr. William H. Lee (retiring President) and Mr. Ernest C. Holloway (Past President) referred to the great interest Mr. Ridge had long taken in the affairs of the Institute and particularly in the cause of building education. Mr. W. W. Finlayson, J.P., Mr. F. Leslie Wallis, O.B.E., J.P., and Mr. H. S. Oddie were re-elected, and Mr. G. O. Swayne was elected, to Vice-Presidential office. Mr. William H. Lee was elected Honorary Treasurer in succession to Mr. Ernest C. Holloway.

In the course of his inaugural address, Mr. Ridge said the present was a particularly important time for the Institute. For 30 years it had had the wholehearted services as Secretary of Mr. P. J. Spencer. To call those services valuable was not doing him justice; the nearer one got to the working of the Institute, the more one realised that they had been quite invaluable. At the end of that long period of service, members would not begrudge him a lightening of the load which he had carried so well. They should, however, make full use of his great experience in his continued association with the Institute.

Mr. Ridge then referred to the work of the Institute and said he believed the Institute's certificates and qualifications were sought and valued in the industry; he was sure the Institute was right in maintaining its conditions and standards.

Mr. Ridge spoke of the controls under which the industry had laboured for so many years which had hindered recruitment to the crafts and to the field of higher technology and management; their adverse effect continued. The industry had not been free for many years to plan effectively for itself; and its outlook, growth and general activity had been sadly hampered by the restraints which had been put upon it by successive Governments. They would all welcome a simplification of licensing and would be glad when it could be abolished. He inclined to the view that if free enterprise were restored within the industry and the brakes of present-day practices were removed, then (despite temporary disturbance) the changed conditions would soon show welcome improvement in the progress they sought. From the builders' standpoint, they wished to be free to plan, to buy and to work. If these conditions prevailed, he would view the future well-being of the industry more optimistically—and how important they were to the efficiency of the industry and to the young men who had chosen to make it their career! It was, however, in the nature of the industry to show initiative and ingenuity in the face of difficulties and so, notwithstanding hindrances, some progress could be claimed in many directions, including education. This was true for the crafts.

Training for Administration

In the direction of higher administrative and executive positions, the Institute had sought to the extent of its resources to foster education and training in general building technology and practice. Here, he thought, the Institute could justly claim to have played its part. The Institute sought greater effect and benefit to the industry through its scheme to register students and, thus assured of a close liaison with the schools and colleges, he was confident that good would flow from mutual good will and understanding.

Mr. Ridge referred to the importance of research, to its demands which were larger than could be sustained by any one institution, and to the contribution which could be made by knowledgeable members of a body like the Institute of Builders. In conclusion, he thanked the staff for their loyal and good work during the past year and said he relied on the goodwill of the members in his endeavours to serve the Institute during the ensuing year.

A general discussion took place on matters affecting the Institute.

IRON AND STEEL CORPORATION

£34m. Profit in 7½ Months

A PROFIT of over £34m. was made by the Iron and Steel Corporation of Great Britain, since it acquired the shares of the principal steel companies on February 15, 1951, according to the Corporation's first annual report and accounts for the period ended September 30, 1951, published on August 21 last by H.M. Stationery Office (price 3s.).

The total production of crude steel in 1951 was 15,638,000 tons which was about 4 per cent. less than in 1950. The publicly-owned companies produced more than 98 per cent. of the total tonnage of ingot steel. Demand for steel was in excess of supply which was limited by shortage of raw materials.

Although much of the industry's equipment is efficient, some plants are out of date and expensive in manpower and fuel and large sums will need to be invested for many years in modernisation and new plant. Capital investment has recently been at £50m. per annum and it is expected that investment will continue to be required at about £60m. per annum. Retained profits cannot be expected to provide for expansion as well as maintenance and replacements. The corporation are now drawing up with the industry a general development programme.

Speaking at a Press conference in London on August 21, SIR JOHN GREEN, chairman of the corporation, said that if everything went according to plan it was almost certain that output this year would be considerably greater than last. It was also possible that conditions in the next 12 months may result in a reduction in prices.

PRICE BUILD-UP TODAY

By CAIN (V. C. Abell)

includes Tables for converting Labour Constants to Cash Equivalents and Revised Wage Rates to September, 1951

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TOWN PLANNING DECISIONS

"Modern" Farmhouse Allowed

A SUCCESSFUL appeal has been made by Mr. A. Drexler against Oxfordshire County Council's refusal to allow the construction of a "modern-style" farmhouse and herdsman's cottage at Marston, in a field on the eastern bank of the river Cherwell. The site is not conspicuous from the river, but is visible from parts of the Oxford northern by-pass and the country beyond.

The council's view was that the farmhouse and cottage should be designed in traditional style, in particular with pitched roofs, and that the proposed flat roofs, horizontal lines and wide expanses of glass and void wall would be incongruous in the Oxfordshire rural scene.

The Minister states that he appreciates the council's wish to preserve the character and appearance of the rural scene, and would consider it undesirable that buildings of a radically different style should be erected among the attractive traditional buildings which were to be found in so many of the charming villages in Oxfordshire and the Cotswolds.

As, however, there is no village in the immediate vicinity, and the nearer and more conspicuous of the existing buildings are not of traditional design, the Minister sees no reason why buildings designed in accordance with the submitted plans should not fit well into the landscape, and he has accordingly decided to allow the appeal.

Caravans at Boreham Wood

THIRTY-THREE caravans are to be allowed to remain for a period of three years on a site known as Ashdown, Theobald Street, Boreham Wood, the Minister of Housing and Local Government having allowed the appeal of Mr. J. J. Holt against the refusal of Elstree R.D.C. to permit the continuance of such a user. The Minister, however, has upheld the council's refusal to allow the frontage of the site to be developed as a petrol filling station.

I.B.I.C.C.

Annual Awards

THE Incorporated British Institute of Certificated Carpenters have announced their annual awards. Unlike previous competitions which have been open only to candidates in a limited number of technical colleges, this year's competition was open to all bona fide students of carpentry and joinery at technical colleges throughout the country where the course work is at the standard required for the final examination of the City and Guilds of London Institute. The awards are as follows:—

Premier Award—H. R. Gouch (School of Building, Cambuslang). *Preliminary Awards—London Section*—J. D. Paterson (Willesden Technical College). *North-Western Section*—R. Tolworthy (Burnley Technical College). *Midland Section*—P. J. Thwaites (Wolverhampton Technical College). *East Scottish Section*—W. R. Rudiman (Kirkcaldy Technical College). *Southern Section*—R. R. Williams (I.o.W. Technical College). *West Scottish Section*—H. R. Gouch (winner of Premier Award). *Northern Section*—K. Churchman (Sunderland Technical College).

Uses for Aluminium

The latest uses to which aluminium has been put are described in "Aluminium News," issued by Aluminium Union, Ltd., Montreal, Canada.

THE DRY ROT MENACE

New Edition of Handbook

A THOROUGHLY revised edition of Forest Products Research Bulletin No. 1, "Dry Rot in Wood," was recently published for the D.S.I.R. by H.M. Stationery Office, price 2s. It contains very full information on how to recognise a dry rot attack and what to do about it before it becomes extensive and expensive.

Dry rot has become much more widespread in the last ten years. Mainly because of the war it has gained a hold on many buildings which were not maintained properly. From them it has spread vigorously, even into post-war houses. It is now costing something like £20m. a year in replacements and repairs.

By far the most important of the wood rotting fungi is *merulius lacrymans*. It must have moisture to start its attack. In its search for more wood it is able to pass through thick brick or stone walls. Strands of it, which may be as thick as a pencil, transport water so that it can rot moderately dry timber once it has got a grip. In really bad conditions every piece of timber in a house may be infected.

Dry rot spreads easily. For example, the fungus may be brought in with timber for ordinary repairs or with firewood, quite often obtained from houses infected already. It can eat its way into the rest of the timber in a building at a rate of many feet in a few months. Its spores can also be brought in on clothes, by birds or by rats. Each spore is a potential attack.

The most urgent method of combating dry rot is to leave no damp spot anywhere in a house. Leaky gutters, cracked pipes and so on should be repaired immediately. cellars should be kept dry. If there is no moisture no attack can develop. If dry rot is left to spread, the bill for repairs can be an extremely heavy one.

The Bulletin describes practical methods of detecting and treating the decay. There are photographs of timber under attack and of the fungus at various stages. Sections are included on how to sterilise infected walls and how to treat timber with preservatives to make it safe. The Building Research Station contributes a section on good and bad building construction for various types of walls and floors. Good construction can eliminate the possibility of attack almost completely.

Other fungi which cause decay in wood in buildings are dealt with in the Bulletin. It is a comprehensive work.

OFFICIAL NOTIFICATIONS

Timber Licences in London

Arising from Circular 59/52 of July 18 regarding the raising of the "Free Limit" under Building Licensing Regulations, the Ministry of Housing and Local Government states that all applicants for licences for softwood for housing purposes in the London region should be referred to the appropriate Regional Office of this Ministry—i.e., Caxton House, Tothill-street, S.W.1, and *not* to offices of the Timber Control.

Dealings in Lead

The decision to reopen the London Metal Exchange for dealings in lead was announced in Parliament on July 28. The Ministry of Materials now announces that agreement has been reached with the Committee of the London Metal Exchange on October 1 as a firm date for this purpose. The Ministry will make no new contracts after September 30 for the sale of lead to consumers.

ENGLISH-BUILT HOUSES FOR CANADA

A New Development

ON SEPTEMBER 4, at Lincoln, the Minister of Works, Mr. David Eccles, M.P., will open the first house to be supplied under a 100,000 dollar order obtained by H. Newsum Sons and Co., Ltd. This house will be erected in one working-day—i.e., between 8 a.m. and 5 p.m. By its side will stand a finished and furnished prototype of the Canadian house. The houses are factory-built in timber, and are designed to specific Canadian requirements. The Riley-Newsum house has been specially developed for this market by Mr. James Riley, an expert in factory-built houses, who joined the firm in 1949. These houses for Canada are a follow-up of orders for 2,600 houses worth four million pounds sterling which he negotiated in the Australian market.

The houses are crated in sets of eight. The total for an eight-house set is 104 crates, and 64 bundles of pre-cut pieces weighing in all approximately 96 tons. The first four houses of this type are going to be erected at the model town of Ajax, 14 miles from Toronto, where the Canadian Government experiments with various types of housing. Another 24 will be put up at Gander, Newfoundland.

Festival Guide

The 1952 Festival Gardens Guide, on sale at 1s. 6d., makes an informative and pleasant companion for a visit to Battersea Park. A map is included, as well as details of where to eat, drink and find transport home.

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STEEL FOR SCHOOLS

Requirements for 1953-54

AS briefly announced in our last issue, the Ministry of Education have asked local education authorities for particulars of their future steel requirements in connection with educational buildings. Administrative Memorandum No. 413, Addendum No. 3 (dated August 18), in which the request is made, states:—

Now that the educational building programme for 1953-4 has been compiled the Minister wishes to settle as soon as possible provisional total and first instalment bulk allocations of steel for Periods III, 1953 to II, 1954 inclusive.

Authorities are therefore asked to provide estimates of their steel requirements for these periods on form S.B. 24(a), and to return the completed form to the Ministry not later than September 27 next. The following points should be noted.

The steel likely to be available will not permit an average consumption for the 1953/54 school building programme as a whole greater than for 1952/53. Any excess over the figure of 1 ton for each £950 of gross cost should therefore be explained when the form is submitted.

The phrasing of requirements should be as realistic as possible. In particular, it will be necessary to devise a pattern of starting dates which ensures that the authority's total steel requirements are distributed fairly evenly over the four Periods III, 1953 to II, 1954, and are of the same order in each of these periods as the provisional total allocations already announced for Periods I and II, 1953. For Period II, 1953, however, the Minister hopes to be able to make a few small increases in the provisional total allocations already announced if such increases are necessary to enable exceptionally urgent projects in the 1953/54 school building programme to be started on the site during the first quarter of the programme year. Additional Period II, 1953, demands should be submitted only for this purpose, and should not exceed 15 per cent. of the provisional total allocation already announced. The Ministry's Regional Priority Officers and the Welsh Priority Officer will of course be ready to give advice on the timing of starting dates.

Part II of the form should be compiled on the assumption that the provisional total allocations already announced for Periods I and II, 1953, will be confirmed, and that orders placed within these allocations will be accepted by suppliers.

In order to help the Minister to assess the quantity of steel which should be held back from the bulk allocation scheme, authorities are asked to record the steel requirements of major projects other than for primary and secondary schools. To enable Part II of the form to be completed for these projects, letters are being sent to the authorities concerned indicating the quantities of steel which the Minister hopes to allocate in Periods I and II, 1953, to jobs included in the 1952/53 programme but not yet finally approved; some authorities have already been given this information.

The Minister suggests that estimates in Part III of the form should be based on actual or prospective deliveries during the four Periods III, 1952, to II, 1953.

It is hoped that the examination of the estimates submitted will be completed during October, 1952, and bulk allocations announced towards the end of the month.

NEWS IN BRIEF

L.M.B.A. President in Scotland

The President of the L.M.B.A., Mr. D. E. Woodbine Parish, F.I.O.B., who is to address the Rotary Clubs in Edinburgh and Glasgow next week, is being entertained to dinner by the Scottish Federation of Building Trades Employers in Glasgow on Tuesday evening.

Demonstration Cottages

A prototype pair of timber cottages suitable for rural council and private housing are being completed by W. H. Colt, Son and Co., Ltd., under the auspices of the Ministry of Health. One of these is being furnished by Heal and Son, Ltd. This house will be open to the public from September 7 to October 11, at Bethersden, near Ashford, Kent.

Stonemason Apprentices

The London Association of Master Stonemasons, which is affiliated to the L.M.B.A., is holding its Apprentices' Practical Examination on Saturday, September 6, at the masonry works of the Wandsworth Stonemasonry Works, S.W.8. Some 80 boys are taking part. An outing to the quarries at Portland on September 9 has been arranged for the boys taking part in the examination, and the prize-giving will be held in the L.M.B.A. offices on September 16.

Timber Houses on Sale in Shops

Prefabricated houses from Norway will soon be on sale at department stores in Auckland, New Zealand. There will be a choice of five different types, at prices ranging from £500 to £1,400. These houses, made at Kristiansund, are constructed of planed boards, numbered and grooved to fit together, so that nails and bolts are not needed except to fix the roof and floor. Buyers must supply their own foundations, chimneys and water pipes, and it is claimed that one of these houses can be erected in the course of a day.

Midlands Building Exhibition

The Midlands Building Trades Exhibition will be held in Bingley Hall, Birmingham, from February 18 to 28, 1953. New developments will be shown in materials and methods, and everyone within 50 miles of Birmingham connected with the building trade will receive an invitation. A bursary scheme will be in operation for boys engaged in the industry. In the 1951 exhibition three bursaries were awarded of £50 per annum for three years. Working demonstrations are to be given by apprentices, and some firms have already taken display space.

"People's House" on Show

Sponsored by the Ministry of Housing and Local Government, an example of the "People's House" will form the central feature of the Midlands Ideal Home Exhibition which opens at Bingley Hall, Birmingham, on September 24. The Council of Industrial Design is supervising the interior decoration and furnishing. Built by John Laing and Son, Ltd., the house will be open for inspection by visitors to the exhibition.

Quantity Surveying Examination

The Institute of Quantity Surveyors announces that the next special test and professional examination will be held from March 2 to 6 next year in London, provincial and overseas centres. Further details will be advertised later.

Heating and Ventilation

The 1952 Year Book of the heating and ventilating industry has been published by Technitrade Journals, Ltd., Carlisle House, 8, Southampton-row, W.C.1, in collaboration with the Association of Heating, Ventilating and Domestic Engineering Employers. The purpose of this sixth issue, price 7s. 6d. net, is to provide in one compact volume, technical, contractual and other trade information for the benefit of architects, consultant engineers, surveyors and others who are continually in close contact with heating and ventilating contractors.

BRITISH DECORATORS

Incorporated Institute's Examinations

THE Incorporated Institute of British Decorators announce the results of their Associateship examinations (Final Grade), 1952, as follows:—

The following candidates successfully passed:

F. Wood (Birstall); Miss A. Bennett (Bournemouth Mun. Coll.); J. S. Goodfellow, R. J. Piper and R. T. Smith (Brixton Sch. of Building); A. Thomasson (Bolton Sch. of Art); Miss P. R. Lashmar and E. F. J. Meayers (Northern Poly.); and N. Parker (Coll. of Art and Crafts, Nottingham).

Awarded a deferred result: K. V. Townend (Northern Poly.).

The Institute prize of books, value £10 10s., for excellence of work submitted in the Final Grade was awarded to Mr. R. T. Smith (L.C.C. Sch. of Building, Brixton).

The pass list in the preliminary and intermediate grades is also announced.

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L.C.C. CALL HALT ON HOUSING SITE

High Costs Blamed

MR. I. J. HAYWARD, Leader of the London County Council, has confirmed that all work on the L.C.C. housing site at Boreham Wood, Herts, will definitely come to an end to-day (Friday), even though the estate is not yet half completed.

About 1,000 building workers who have been engaged on the two sites at Rippon-way and Theobald-street for two and a half years, will receive notice. (There are nearly 1,000 houses under construction.)

The council have made this decision following a long series of "go slow" tactics on the site which has caused the cost of building to rise considerably in excess of the estimated price. Mr. Hayward stated that the council seriously considered calling a halt earlier this year when a number of disputes arose on the site, but the work was allowed to continue and production improved for a time. Recently the situation had greatly deteriorated. There had been an unofficial strike and more "go slow." In practice "go slow" was more costly to the contractors of the council than even a strike, he said.

The recent disputes, he added, had slowed down the progress of the work and at the same time had increased the cost of such work as had been done.

Mr. J. Mildwater, of the National Federation of Building Trade Operatives, said that it was the employers' responsibility if the costs were too high, and that it was due to the failure of the administration. Earlier this year there had been allegations of inefficiency on the site and there were a number of stoppages, he said. An inquiry called for by the men on the site, and the trade unions concerned, was never held.

An official of the contractors stated that in the two and a half years since building began, there had been 16 unofficial strikes or "go-slow" movements, the last being in April and July this year. During the "go-slow" periods production fell from 25 houses a week to about 11; it had dropped to as low as six.

Politics was at the root of the trouble, he said, and the majority of the men working on the site had been influenced by a small group intent on disrupting the progress of the work. He believed that the L.C.C.'s decision to call a halt was the most appropriate action to take in the circumstances.

At a mass meeting, attended by about 800 operatives, held on the Rippon-way site on Monday, it was decided to: (1) Write to the Prime Minister drawing his attention to the situation; (2) Send a deputation to the L.C.C. to ask for a withdrawal of the notices, and invite the council to take over the sites as a direct labour scheme; (3) Approach the district and national headquarters of the various building trades unions concerned to have the stoppage declared a lock-out; (4) Send a deputation urging a public inquiry to the N.F.B.T.O. when its Executive Committee held an ordinary meeting the following day.

L.C.C. approval of the Boreham Wood scheme was given in 1946, when the cost was estimated at £7,160,000. Messrs. Gee Walker and Slater, Ltd., are the main contractors.

In addition to 4,000 houses, the scheme provided for 136 shops, 10 schools, civic offices and police and fire stations. Sites were to be reserved for other development.

OVERSEAS BUILDING

[From Our Own Correspondents]

Australia.—Although business in Australia has slackened over the past nine months, it has not led to any serious set-back in building. In point of fact, building plans are on the increase, with major Australian industrial companies drawing up designs for factory extensions and new factories. Sulphide Corporation, Ltd., is to spend about £1,250,000 on erection of new sulphuric acid plant at its Cockle Creek works near Newcastle, N.S.W. The Vacuum Oil Company plans to build a 250,000,000-gallon oil refinery at Altona, Victoria, and has advanced this project by forming a new £15,000,000 company. Extensions are also planned by Chrysler Australia, Ltd., for building aircraft, especially the Canberra jet bomber, and the Gawler Manufacturing Co., a textile firm, is also to build additional premises. I.C.I. of Australia is among the large concerns with full-scale building plans.

Belgian Congo.—A large power station is to be built on the Lualaba River, Belgian Congo, within the next three years to supplement the one already there. Great projects are on the books for this large colony of Belgium, projects which may offer good opportunities to British contractors of prefabricated buildings, supplies and accessories. For example, the harnessing of the waters of the Matamba River some 50 miles above Matadi, the main port, is a long-term project which may well lead to the industrialisation of the whole of the lower Congo area. There is a ten-year plan contemplated for the province of Kivu which will provide for the construction of a new port at Costermansville. The first of the new installations is to be undertaken shortly. Storage and warehouse facilities are to be greatly extended at Stanleyville. And the Belgian Minister for the Colonies recently announced a project at Leopoldville for the linking up of the Port Franquil railway. This work is expected to take five years. Meanwhile, in Leopoldville itself there is much evidence of building work as offices and administrative buildings go up.

Hong Kong.—A contract for $2,323,549.47 has been awarded to a Hong Kong firm of building contractors to erect the first section of the new Government Offices and Secretariat at the junction of Garden-road and Lower Albert-road, Hong Kong. The contractors, Paul Y. Construction Co., Wang On Bank Buildings, Desvouex-road, are at present getting materials on the site and are starting to excavate the ground for the foundations of this part of the three-year building scheme. The initial section will stretch from Garden-road up to the present Secretariat building and will comprise a basement, lower ground floor, ground floor and four upper floors with a total floor area of about 51,000 square feet. The new building will be air-conditioned and will eventually contain the whole of the Public Works Department Offices with the exception of the Waterworks Office. As soon as it is completed, the Secretariat will move in temporarily while their present building is being demolished and a new building—the second stage of the building programme—is re-erected on the site. On the completion of the second stage, the Secretariat will move into the building and the Public Works Department will then move from their present accommodation in Lower Albert-road to their permanent accommodation. The present Public Works Department offices will subsequently be demolished and the third portion of the new scheme will afterwards be erected.

Izmir, Turkey.—Work is scheduled to begin shortly on the new headquarters for South-Eastern Europe command of NATO at the Turkish west coast of Izmir. Establishment of this base will be followed later by development of a SHAPE air base at Salonika, Greece. It will become interim air headquarters for the SHAPE South-Eastern Europe Command.

Pakistan.—Professor W. J. van Blommestein, Netherlands irrigation expert, has left for Karachi, Pakistan, where he is to supervise final plans for an irrigation project extending over an area of two and a half million acres. It is hoped to utilise water from the Ganges for the Ganges-Kobadek area. The plan should be fulfilled in seven years. Professor van Blommestein hopes this present plan will be the precursor of a much larger one, under which 15 million acres will become harvest-bearing. . . . Pakistan is also relying to a great extent on Dutch building technicians for the erection of factories for sugar, paper and cardboard industries.

South Africa.—The South African Electricity Supply Commission has been allocated £7,000,000 on loan by the Import-Export Bank in Washington for additional power supplies. According to Mr. G. R. D. Harding, general manager of ESCOM, the supply of power into the Rand Undertaking system of the Commission will be augmented for uranium production by the erection of a new power station at Wilge, near Witbank. This station, together with the Taaibos station and the one at Vierfontein, will complete the programme of new stations and will meet all power requirements for many years. . . . Work has also started on the building of a new £250,000 steel factory on the banks of the Vaal river at Parys in the Orange Free State. The steelworks is being built by the German company Bauer and Schaunte, and the aim is to produce steel for export only to the African continent and the southern hemisphere. A report from Parys, though unconfirmed, states that the necessary buildings have been bought and that 80 per cent. of the machinery, worth about £125,000, has already arrived from Germany.

Sweden.—The Swedish Government has given permission to the Loussavaara Kuranavaara Company to build a sinter works at Malmberget. Size of the works can be gauged from production, which is to be 100,000 tons per year. The company already produces a considerable quantity of iron ore concentrate in this area and intends to sinter part of this output. It is probable that other works will be erected in this vicinity to cope with the very large mineral deposits. . . . The Swedish Diamond Rock Drilling Company is prospecting on behalf of a number of mining companies for coal on Spitzbergen. The site is north of the main mining field of Longyearbyen and the deposits are located at depths down to 1,300 ft., where the coal is permanently frozen. Mining buildings will be erected here to cope with the coal, and all offers of suitable equipment will be welcomed. The Swedish mining companies of Stora Kopparbergs Berslags A.B. and Boliden Gruv A.B. are sharing with a Danish and Canadian company in lead and zinc mining at Mesters Vig in Greenland. These companies will also be pleased to receive offers, as the usual buildings needed for mining these minerals will be required. It is also possible that laboratories will be built on the mining sites so that sample tests can be made on the spot.

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TRADE NEWS

An Appointment

Mr. A. B. Read, R.D.I., A.R.C.A., F.S.I.A., has been appointed director of design to Messrs. Carter group of companies. This was announced at the annual meeting of Carter and Co., Ltd. Mr. Read, who was Master of the Faculty of Royal Designers in Industry, 1950-51, has, since 1928, been Director of Design to Troughton and Young, Ltd.

Apsley House, Piccadilly

The bronze metal framed showcases placed in Apsley House (illustrated in our last issue) were supplied to the order of the Ministry of Works by Messrs. A. Edmonds and Co., Ltd., of Birmingham.

Portable Roads at Lynmouth

The type of portable road construction used in Normandy after D-day, known as the Sommerfeld "Flexboard" road, has been brought into operation at Lynmouth, where it is now enabling reconstruction to be put in hand in North Devon's stricken areas. The works of the Sommerfeld Group are at Wellington, Shropshire.

The SCOTTISH BUILDER

Timber Houses Imported

TWELVE PROTOTYPE timber houses of the Norge type shipped to Leith from Gothenburg and erected at Fort William, have been given approval by the Department of Housing for Scotland and Building Research authorities. These prototypes are being used for farm housing. They are the first of their type to be erected in Britain. The timber used in the houses is Swedish white pine or, alternatively, Norwegian spruce. External walls are coated. The walls are 2 in. or 2½ in. solid timber double tongued and grooved.

Houses of this type are being manufactured in three- or four-apartment style, single or double-storey. In the double-storey type the timber is 3 in. solid double tongued and grooved. A three-apartment house weighs approximately eight and a half tons. Total cost is approximately £1,274. A guarantee period of at least comparable length to traditional housing is given.

Tunnel Under Clyde

GLASGOW CORPORATION Water Department in its annual report indicates that the way is now clear for submission to the Secretary of State for Scotland of a plan for the construction of a tunnel under the Clyde to carry the new West Main. If early approval is given the actual work can start before the end of this year.

This development follows the appointment of a consultant to survey the possible routes and approval by the Government of a special tunnel to carry the main. The intention is to press for the earliest implementation of the plan. The Corporation is also going ahead on a large-scale project in Glenfinlas to augment the Loch Katrine supplies. Early approval is again sought and if given will allow a start to be made on the scheme early next year.

Tower Travels 400 Miles

A 40-TON vacuum tower for the new £20,000,000 oil refinery at Grangemouth completed a 400-mile journey by road, rail, and sea recently.

The tower—part of a vacuum distillation unit—was taken from the manufacturers' works at Greenwich by road and rail a week ago, and floated in the Thames. It was towed up the East Coast by the sea-going tug Headman, and was delayed for three days off the Humber by strong winds.

Yesterday morning the tower—one of the largest single loads ever handled at Grangemouth docks—was lifted from the water and taken the last two miles on a 32-wheeled bogie, drawn by a 100 h.p. diesel towing unit.

Aberdeen Backs TV Scheme

ABERDEEN TOWN COUNCIL are to give their support to the campaign to hasten the erection of a television transmitting station for Aberdeen and the North of Scotland. The matter was before a meeting of the Lord Provost's Committee recently and it was decided, in view of the fact that the reception from Kirk o' Shotts was not satisfactory, that representations be made to the Secretary of State and the M.P.s for the area.

A sub-committee was appointed to press for the establishment of the television transmitter already scheduled for the area, and to ask the authorities to endeavour to have it in operation in time for the Coronation.

The committee decided to recommend that no action be taken meanwhile on a proposal to set up a caravan site in the city, this step being taken in view of the cost that would be entailed in providing sanitary services on a scale that would satisfy their Medical Officer of Health and Sanitary Inspector.

NEW BUILDINGS

Ayr.—Plans are to be prepared for nine houses to be erected at cost of £44,000 at the Greenan Farm site. Architects, Stevenson & Ferguson, AA.R.I.B.A., 20, Wellington-sq., The Sandgate, Ayr.

Brechin.—From plans by their architects, the Congregational Church Union, Edinburgh, is to have Montrose Old Congregational Church reconstructed. Est. cost, £24,450.

Dumbarton.—Plans have been prepared for 234 houses for the Scottish Special Housing Association, Ltd., for which the architect is J. Austin Bent, A.R.I.B.A., 15, Palmerston-pl., Westend, Edinburgh.

Edinburgh.—Corpn. is to erect over 200 houses at the Inch housing site, for which the architect is A. G. Foggie, A.R.I.B.A., Municipal-chbrs., Parliament-sq., High-st., Edinburgh.

Fifeshire.—Plans are to be prepared by their architects for new halls, etc., to be erected at Glenthroes by the Church of Scotland, George-st., Westend, Edinburgh.

Glasgow.—Dominion Cinema (Glasgow), Ltd., has received approval from the Secretary of State for Scotland for planning permission for a site at Paisley-rd. and Seaward-st. for the erection of a cinema.

Glasgow.—Plans are in the hands of their own designers for new offices, etc., which are to be erected at East Wellington-st. for Beardmore & Co., Ltd., Parkhead Steel Works, Parkhead.

Glasgow.—Plans are to be prepared for extensions and additions to commercial garage at Rampart-ave. and the Great Western Boulevard, for which the architect is Andrew Howie, 9, Vernons-ave., Kelvinside, Glasgow, W.C.

Glasgow.—Plans are to be prepared for the East Kilbride Dairy Farmers, Ltd., for additions, etc., at Anson-st., for which the architect and principal contractors are Currie & Co., Ltd., Parkhill-st. Works, East Kilbride.

Hamilton.—Corpn. is to erect at Douglas-st. six houses and at the Uddisto Hill housing site 15 houses, etc. Architect, George Allison, M.Inst.C.E., Municipal-chbrs., The Cross, Hamilton.

Inverness-shire.—C.C. is to erect 80 houses for the Forestry Commission. Architect, Alexander Cullen, O.B.E., F.R.I.B.A., County-chbrs., Inverness.

Kincardineshire.—C.C. is to erect 50 houses, etc., at Portlethan. Architect, Allistair Sturrock, County-chbrs., Stonehaven.

Kirkcaldy.—Fifeshire C.C. has had sketch plans prepared for a new sec. sch. estimated to cost £250,000. Architect, R. S. Lawrie, F.R.I.B.A., County-chbrs., St. Catherine-st., Cupar.

Lanarkshire.—Plans are in hand for alterations, etc., for Malga Products, Ltd., which are to be constructed at Muirend-ave. Works, Clarkston. Architects, Watson, Salmond & Grey, A./F.R.I.B.A., Central Station-bldgs., Union-st., Blythswood, Glasgow.

Lanarkshire.—Plans are to be prepared for 22 houses at Balarnock, for which the architects are Samuel Buntin & Associates, A./F.R.I.B.A., 7, Somerset-pl., Charing Cross, Glasgow, W.C.2.

Lanarkshire.—Plans for a £10,000 extension to Salisburgh Parish Church are in the hands of the architects of the Church of Scotland, George-st., Westend, Edinburgh.

Monkton.—Ayrshire C.C. have received approval of the proposed extension to the public sch. Architect, Robert G. Lindsay, A.R.I.B.A., County-bldgs., Wellington-sq., The Sandgate, Ayr.

The Builder FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

SEPTEMBER 1.

***†Warminster U.D.C.**—36 houses at Alcock-cres., Warminster. Snailham, Huggins & Le Fèvre, 18, Brock-st., Bath. Dep. £2.

SEPTEMBER 3.

***†Leeds Regional Hospital Board.**—Alterations, Seacroft Hospital, York-rd. Secretary to Board, Park-parade, Harrogate. Dep. £2 2s.

***†Witham U.D.C.**—64 houses at Maldon-rd., 72 houses at Rivenhall Oak. T.C., Council Offices, Collingwood-rd. Dep. £2 2s.

SEPTEMBER 5.

***†Bucks C.C.**—Canteen kitchen and classroom, Amersham Common school. County Architect, Aylesbury. Dep. £2 2s.

***†West Ham B.C.**—77 flats, 16 houses and 16 maisonettes in Whitwell-rd. area, E.13 (Contract 177). Boro' A., 70, West Ham-la., E.15. Dep. £2 2s.

SEPTEMBER 6.

***†Essex C.C.**—Adaptations to children's home at "West Lodge," Buckhurst-hill. County A., County Hall, Chelmsford.

***†Essex C.C.**—Eight houses at Lenthall-ave., Grays. County A., County Hall, Chelmsford.

SEPTEMBER 8.

***†Bucks C.C.**—Alterations and extensions to the Bletchley Park sports pavilion. County A., County Offices, Aylesbury. Tenders by September 26.

Llandudno U.D.C.—14 houses on Tre Creuddyn housing estate. E. & S., Town Hall.

***†Mitcham B.C.**—66 maisonettes at Baron House estate, London-rd. B.E. & S., Town Hall. Tenders by October 4.

***†Portsmouth City C.**—72 flats at Paulsgrove. City A., Municipal Offices, 1, Western-par., Southsea. Dep. £3 3s.

†Southampton T.C.—Reconstruction of six maisonettes at Threefield-la. Boro' E., Civic Centre. Dep. £2 2s. Tenders by October 6.

Wombwell (Yorks) U.D.C.—100 houses at Wilson-st. C. Knowles, architect, Town Hall, Wombwell. Dep. £2 2s.

SEPTEMBER 9.

***†Bromley B.C.**—64 houses and 10 old people's dwellings at Blackbrook estate. B.E., Municipal Offices. Dep. £2 2s.

Tamworth B.C.—Reconstruction of public conveniences at Town Hall. B.E. & S., Municipal Offices.

SEPTEMBER 10.

Norwich City C.—22 dwellings at Cooper-la. estate. City A., City Hall. Dep. £1.

SEPTEMBER 11.

***Stourbridge B.C.**—12 lock-up garages at Norton housing estate, with access road. B.E. & S. Dep. £2 2s.

SEPTEMBER 12.

***Morley Boro'.**—26 bungalows on two sites. M. H. Brook, Housing Director, National Provincial Bank-chbrs., Queen-st. Dep. £2 2s.

SEPTEMBER 15.

***†Barking B.C.**—Additions to control centre. Boro' A.

***Hornchurch U.D.C.**—24 flats at Easedale-dr., Elm Park. B.S., Council Offices, Billet-la. Dep. £2 2s.

***Isle of Wight R.D.C.**—80 houses on four various sites. T.C., 30, Pyle-st., Newport. Dep. £5 5s.

Keighley T.C.—26 houses at Thwaites Brow-rd. Boro' A., College-st. Dep. £2.
New Mills U.D.C.—48 houses, Highfield estate. Surveyor. Dep. £2 2s.
***Southport B.C.**—Four houses at site 15, Heathfield-rd. Boro' A., 93, Lord-st. Dep. £2 2s.
***†Watford R.D.C.**—32 houses, Anthony-close, Green-la., Oxhey. Dawe, Carter and Partners, architects, 83, High-st. Dep. £1 1s.
***Wokingham U.D.C.**—20 houses and 4 maisonettes, roads, etc., St. Sebastian's, Nine Mile Ride, Wokingham Without. Eric G. V. Hives (L.), 3, Cork-st., Reading. Dep. £2 2s.

SEPTEMBER 16.

***Southend-on-Sea B.C.**—Eight garages at 1, Prince-ave. Boro' A. Dep. £1.

SEPTEMBER 18.

***Barnes B.C.**—Seven lock-up garages at Railway-st., S.W.13. B.E. & S., Municipal Offices, Sheen-la., S.W.14.
***†Leeds Reg. Hosp. Board.**—New X-ray accommodation at County General Hospital, Park Lodge-la., Wakefield. Architect to the Board, Park-parade, Harrogate Dep. £2 2s. Tenders by October 15.

SEPTEMBER 19.

***Leyton Boro'.**—27 maisonettes and flats, Park Grove-rd. B.E. & S. Dep. £2 2s.
***†Southgate B.C.**—Five houses and 11 flats at the junction of Arundel-gdns. and Haslemere-rd., N.21 (Contract A); 2 houses in Cowper-gdns., N.14 (Contract B). B.E. & S. Dep. £2 2s. Tenders by October 20.
***Southport B.C.**—Alterations and extensions to the fire station, Manchester-rd. Boro' A., 93, Ford-st Dep. £2 2s.

SEPTEMBER 20.

***March U.D.C.**—14 bungalows, Deerfield-rd. estate. W. S. Pickett, Architect and Surveyor. Dep. £2 2s.

SEPTEMBER 22.

***Benfleet U.D.C.**—Ten dwellings at High-rd. and Hatley-gdns. B.S., Council Offices, Thundersley. Dep. £2.
Shoreham-by-Sea U.D.C.—32 houses, Hammy-la. estate. R. Browne, architect, 4, East-st., Shoreham-by-Sea. Dep. £3 3s.
***Sittingbourne and Milton U.D.C.**—36 flats on Canterbury-rd. housing estate. E. & S., High-st. Dep. £3 3s.

SEPTEMBER 23.

***Glasgow Corporation.**—60 flats on three sites. Director of Housing, 20, Trongate, C.1.

SEPTEMBER 24.

***Camberwell B.C.**—Six flats, 64, Crawthen-gr. B.E. & S. Dep. £2 2s.
***Romford B.C.**—22 houses, Crowlands-ave. and 10 houses, Barton-ave. B.E. & S. Dep. £3 3s.

SEPTEMBER 27.

***Uttoxeter U.D.C.**—62 houses, Copes Parks estate. Architect, Old Bank House Annexe, High-st. Dep. £2 2s.
***Walton and Weybridge U.D.C.**—18 flats, Sidney-rd. E. & S.
***Walton and Weybridge U.D.C.**—40 houses, Cottimore-la. estate. E. & S.

SEPTEMBER 29.

***Aldershot B.C.**—108 flats at Denmark-sq. B.E. and S., Municipal-bldgs. Dep. £2 2s.
***Bradford City C.**—New infants' and junior school (560 scholars) near New-line, Greengates. City A., Town Hall.
***Harpenden U.D.C.**—14 houses at Batford (North) estate. T.C., Harpenden Hall. Dep. £1 1s.
***†Hornsey Boro'.**—14 flats and 6 shops, Stroud Green-rd., N.4. G. A. Pentecost, B.E. & S. Tenders by October 31.
***Witham U.D.C.**—64 houses at Maldon-rd. and 72 houses at Riverhall Oak. T.C.

SEPTEMBER 30.

***Carlisle.**—Workshops at Harraby for Cumberland and Westmorland Home and Workshops for Blind. Johnston & Wright, architects, 13, Castle-st.

OCTOBER 1.

***Guildford R.D.C.**—47 dwellings at Cardinals estate, Tongham. E. & S. Dep. £8 8s.
***Guildford R.D.C.**—Eight dwellings at Norwood-cl., Effingham. E. & S. Dep. £2 2s.

OCTOBER 6.

***Guernsey States Hsg. Authty.**—36 flats at Victoria-ave. States E., States Office Annexe, Albert Pier. Dep. £2 2s.
***Rochford R.D.C.**—46 dwellings, Rochford Garden Way. E. & S.
***W. Hartlepool B.C.**—Rossmere county primary school. Boro' A., Municipal-bldgs.

OCTOBER 7.

***Eastbourne B.C.**—18 flats at Langney estate. B.E., 2-4, Saffrons-rd. Dep. £2 2s.

NOVEMBER 4.

***Eastbourne B.C.**—Nine flats at Cayton-pl. B.E., 2-4, Saffrons-rd. Dep. £2 2s.

NO DATE.

***Hemel Hempstead B.C.**—128 houses and 12 flats on three sites. A. H. Turner, B.E. & S., Market-sq.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

SEPTEMBER 8.

***†Hendon B.C.** — Electrical installations at Hendon county grammar school. B.E. & S. Dep. £2 2s.

"THE BUILDER" PRICES

BRASS PRICES REDUCED

The Minister of Supply has made an Order reducing the prices of brass, brass scrap and gilding metal scrap to take account of the recent alterations in the Ministry of Materials selling price for virgin zinc. The prices of 60/40 brass and brass scrap are reduced by £4 per ton, all other grades of brass and brass scrap by £3 per ton and gilding metal scrap by £1 per ton. The Order, the Copper, Zinc, etc., Prices (No. 5) Order—Statutory Instrument, 1952, No. 1548 came into force on August 25, 1952.

CAST-IRON RAINWATER AND SOIL GOODS

The Minister of Works announces that, following discussions with the industry concerned, prices of cast-iron rainwater and soil goods, gutters and connections are increased by 5 per cent. as from August 25. This increase will take account of increases in manufacturing costs which the industry has been bearing for some months. The industry has expressed to the Minister its intention to hold these prices, subject only to any further major increases in cost, at least until the end of the year.

IRON AND STEEL PRICE CHANGES

The Ministry of Supply announces in a new Iron and Steel Prices Order (August 25) that prices of certain qualities of alloy steel and stainless steel products have been revised to take account, amongst other factors, of the changes in production caused by measures taken to conserve nickel and molybdenum; and also to take account of increases in the prices of alloy materials.

Rainwater and soil goods, gutters and connections are removed from Iron and Steel Price Control. The Minister of Works will be responsible in future for pricing questions for these products. A number of other minor changes, including decreases in the prices of some galvanised articles to take account of the reduction of the price of zinc, are also made.

The Order, The Iron and Steel Prices (No. 2) Order, 1952—S.I., 1952, No. 1554, is on sale at H.M.S.O., price 2d.

SEPTEMBER 13.

***Southport B.C.**—Supply and delivery of grates and surrounds, doors, ironmongery, sanitary fittings and boilers. Boro' A., 93, Lord-st. Dep. £1 1s. each contract.

SEPTEMBER 22.

***Brighton B.C.**—Installing metal windows at Whitehawk secondary school. B.E. & S., 26-30, King's-rd. Dep. £1 1s.
***Brighton B.C.**—New heating installation at St. Mark's School. B.E. & S., 26-30, King's-rd. Dep. £1 1s.

ROADS, SEWERAGE AND WATER WORKS

SEPTEMBER 6.

Portland U.D.C.—1.5 miles of water main from Yeates reservoir. E. & S., Council Offices. Dep. £1 1s.
Todmorden B.C.—Laying of 18,850 yds. of asphalt on Burnley-rd. B.E., Municipal Offices, Rise-la. Dep. £2 2s.

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SEPTEMBER 8.

Welton R.D.C.—Roads and sewers at Fiskerton housing estates. Wm. Saunders and Partners, 24, Castle-gate, Newark-on-Trent. Dep. £3 3s.
Willesden B.C.—Reconstruction of Anson-rd., N.W.2. E. & S. Dep. £2 2s.

SEPTEMBER 9.

Bedford B.C.—Sewers and road foundations at Goldington neighbourhood unit, section No. 1. B.E. & S., Newnham House, Home-la. Dep. £1 1s.

SEPTEMBER 10.

Sutton Coldfield B.C.—Roads and sewers, Falcon Lodge estate (stage 6). Boro' S. Dep. £4.

SEPTEMBER 15.

***†Boston R.D.C.**—Sewerage scheme for Fishtoft and Wyberton parishes. Binnie, Deacon and Gourlay, Artillery House, Artillery-row, Westminster, S.W.1. Dep. £10. Tenders by October 13.
Carlton U.D.C.—Roads and sewers at Burton-rd. housing estate, site 29. E. & S., Council Offices, Burton-rd. Dep. £2 2s.

SEPTEMBER 18.

Devizes B.C.—Site preparation for the Hillworth Park housing estate. B.S. & W.E., The Chequers, Devizes. Dep. £3 3s.

SEPTEMBER 22.

Hexham R.D.C.—Water mains, service reservoirs, pumps and meters (6 contracts). G. Nicholson, C., Prospect House, Hexham, Northumberland. Dep. £2 2s.
Louth R.D.C.—Utterby and Fotherby water supply scheme. John H. Haiste and Partners, consultant engineers, 4, Queen-sq., Woodhouse-la., Leeds, 2. Dep. £3 3s.

OCTOBER 6.

Welwyn Garden City U.D.C.—Trunk sewer from Welwyn Garden City to Hertford. R. V. Scoffham, A.M.I.C.E., A.M.T.P.I., E. & S. Dep. £5 5s.

NOVEMBER 15.

City of Capetown.—Wemmershoek dam scheme. Waterworks Branch, City Engineer's Dept. Dep. £15 15s.

GENERAL BUILDING WORK

(LONDON)

Barking.—CHURCH.—Approval has been given by T.C. to a proposed church building at Ripple-rd., for the Elim Four Square Gospel Alliance. The architect is D. Lichgig, 11, Vernon Villas, Chingford-rd., E.4.
Barking.—FACTORY.—T.C. approval has been given to a proposed factory in Thames-rd. to be erected by Organ & Co. (Barking), Ltd., engineers, Riverrd., Barking, for the West Bank Rubber Co., Ltd.
Esher.—SCHOOLS.—C.C. has approved extensions of 3 classrooms to Cobham C.-of-E. school, proposed by County A., at an estimated cost of £6,500.
Esher.—CONTROL CENTRE.—Boro' A. is to submit plans to the Home Office of a proposed report and control centre at an estimated cost of £3,750.
Finchley.—CLINIC.—C.C. has approved the adaptation of part of Kingswood day nursery, Hendon-ave., as a dental clinic at an estimated cost of £3,490.
Walton-on-Thames.—SCHOOL.—C.C. has approved in principle sketch plans prepared by County A. for the first instalment of Hersham county secondary school, at an estimated cost of £124,370.
Woolwich.—OFFICERS' QUARTERS.—Messrs. Armstrong and MacManus (FF.), 19, Manchester-sq., W.1, are architects for the scheme for officers' quarters at Woolwich. The War Office inform us that as plans are still out to tender it is not possible to give an estimate of cost.

(PROVINCIAL)

Ashton-in-Makerfield.—U.D.C. S., H. Halpin, has prepared plans for swimming baths adjacent to Millingford Brook. Est. cost, £55,000.
Birmingham.—T.C. received approval for new toll market and underground car park for 130 cars at Jamaica-row.
Darlington.—T.C. has approved plans for joiners' shop in McMullen-rd., for Paton & Baldwins, Ltd., and for new prim. sch. in Salters-la., for E.C.
Denholme.—U.D.C. propose erection of 20 houses in 1953 and 25 in 1954.
Durham.—Next year R.D.C. intends building about 338 houses. The Council's building programme is carried out by direct labour.—C.W.S. Architects' Dept., 90, Westmorland-rd., Newcastle-on-Tyne, has prepared plans for alterations to premises at Auton Stile, for Bearpark Co-op. Society, Ltd.
Ellesmere.—U.D.C. to purchase Cattis-la. site for housing purposes.
Fylde.—R.D.C. to erect 80 houses in 1953 and 96 in 1954.
Garstang.—R.D.C. propose further 14 houses at Smallwood Hey, Pilling, and houses at Forton, Bilsborrow and St. Michael's during the current year; also erection of shops at Kepple-la. estate, Garstang.
Golborne.—Coal Industries Housing Association propose erection of 102 houses.
Heywood.—Manchester T.C. propose 1,500 houses for overspill population.
Kirkby-in-Ashfield.—U.D.C. to erect six blocks of two-storey dwellings at Forest-rd. estate.
Lanchester.—R.D.C. seeking loan sanction of £23,948 for 14 houses at Hamsteels.

Liverpool.—T.C. propose new bus garages at junction of East Lancs-rd. and Back Gillmoss-la. and at Shaw-rd., Speke.

Macclesfield.—John Morris (Firesnow), Ltd., to erect a new factory at Hurdsfield estate.

Mansfield.—B.C. approved plans for alterations at Station-st., for Mansfield Leather Co., Ltd.; to invite tenders for 58 houses at Debdale estate.

Market Drayton.—R.D.C. propose further 20 houses immediately adjoining new estate at Hodnet.

Middlesbrough.—Sketch plans have been prepared for providing nurses' training unit, casualty and outpatients' dept. and administrative unit at Hemlington Hospital, for Newcastle Reg. Hospital Brd., "Dunira," Osborne-rd., Newcastle. The work will be done in stages. The Board's Chief A. is P. H. Knighton, M.B.E., A.R.I.B.A.

Middlesbrough.—T.C. to place contracts for the erection of another group of 112 houses on Park End site. Boro' E. is J. A. Kenyon, Municipal-bldgs., Middlesbrough.

Newcastle-on-Tyne.—Alterations are proposed to business premises in Croydon-rd. and Baxter-ave. for Newcastle Co-op. Society, to plans by the C.W.S. Architects' Dept., 90, Westmorland-rd., Newcastle.—Governors of Royal Victoria Infirmary, Queen Victoria-rd., are to erect laboratory and waiting-room.—Extensive alterations are to be made to "Chancellor's Head" public-house in Newgate-st., for Robert Deuchar, Ltd., 146, Sandyford-rd., Newcastle.—Alterations are proposed in Prudhoe-st., for Loveys, Ltd.

City Council's plans for eight police houses at Fenham have been approved by Home Office and a contract will be settled shortly.—M.E. has made a compulsory purchase order for a 10-acre sch. site at Denton, for E.C.

Newcastle-under-Lyme.—B.C. approved draft layout for housing site at The Park, Silverdale. Plans by E. M. Parkes, architect to Bournville Village Trust.

B.C. approved plans for R.C. church and church hall at The Hollows, Chesterton.—Remploy, Ltd., propose erection of a new factory as also do Metanodic (Engineers), Ltd.—West Midlands Gas Brd. propose extensions to gas works at Chesterton.

Northumberland.—Pithead baths are proposed at East Hartford Colliery to plans by J. S. Spooner, N.C.B. A., Ashfield Tower, Newcastle-on-Tyne.

Notts.—C.C. approved revised scheme for adaptation of South and West Manors, Ruddington, as accommodation for 36 residents.

Oldham.—B.C. propose library at corner of Whitebank-rd. and Elm-rd., Limeside estate.—E.C. propose head teacher's room, classroom, cloakroom and lavatories at Freehold inf. sch., Derby-st.

Ormskirk.—B.C. to erect 110 houses in 1953 and 130 in 1954.

Rawtenstall.—B,C. approved layout for houses at Bulladen estate.

Silsden.—U.D.C. approved designs for further 20 houses at Dradishaw.

Smethwick.—T.C. to negotiate contract for eight maisonettes at junction of Wellington-st. and Victoria-st.—Received M.E. approval for erection of West Smethwick jun. sch. and new inf. sch. at rear of The Oval.

Stanley (Co. Durham).—A building licence is expected to be issued for a new Church of England at South Stanley, to cost about £13,000. Architects are Cordingley & McIntyre, The College, Durham.

Stockport.—B.C. propose adaptation of Mount Villa, Brinnington, as temporary accommodation for homeless families.—B.C. to erect 500 houses in 1953 and 600 in 1954.

Sutton-in-Ashfield.—U.D.C. approved scheme for 182 houses in 1952, 354 in 1953 and 500 in 1954.

Tipton.—B.C. to invite tenders for remaining 142 dwellings at Park-la. West estate.

Urmston.—U.D.C. to acquire sites for 52 houses adjoining Calderbank House, and 29 at Moss Vale-rd., Davyhulme.—U.D.C. propose crematorium in conjunction with Sale and Stretford councils.—U.D.C. to issue following licences for houses:—J. Maunders & Sons, Ltd., Lostock-rd., for 18 at Calderbank estate; A. Locke (1940), Ltd., Lostock-rd., for 10 at Sherbourne-rd./Newstead-rd./Kirkstall-rd. and Tiverton-rd.; F. Parr, Moorside-rd., for five at Aldermere-cres.—U.D.C. approved plans for warehouse at Ave. Works, Third-ave., Trafford Park, for Jackson Bros., Ltd.

Wallasey.—B.C. propose erection of a hostel for aged at Moreton.

Wallsend.—Wallsend Slipway & Engineering Co., Ltd., propose to extend their tool shop and have prepared plans.—Victor Products, Ltd., engineers, Wallsend, propose to build a pick steel shop at their works.

West Denton (Northumberland).—P. L. Browne, Son & Harding, Pearl-bdgs., Newcastle-on-Tyne, are architects for a proposed new church.

West Hartlepool.—Boro' A. to prepare estimates for public convenience on the Mill House site.—T.C. is seeking loan sanction for £297,368 for the erection of 216 flats on the Owton Manor estate.—Boro' A. has prepared plans for eight flats in Browning-ave. on Rift House estate.

West Lancs.—R.D.C. to negotiate with Sefton Building Co., Ltd., for 20 houses at Aintree.—Approved layout for housing site at Thornton.

Whitby.—R.D.C. approved plans for alterations to "Arncliffe Hotel" for Scarborough & Whitby Breweries, Ltd.

Wigan.—E.C. to acquire site at Norley Hall, for proposed St. Cuthbert's R.C. prim. sch.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Barrow-in-Furness.—135 houses at Ormsgill estate extension and 26 at Newbarns South estate (2nd development), for B.C.: *Direct Labour, £189,065 and £37,531.

Blackpool.—12 houses and eight flats at Branstree-rd., Mereside, for B.C.: *W. R. Ward & Co., 293, Whitegate-dr., Marton, £26,200.

Blackwell.—Houses for R.D.C.:—38 at Shirebrook: *E. C. Rippon, Ltd., Moor-la., Mansfield; 42 at Shirebrook: *Harold Ashley & Son, Ltd., Church-la., Mansfield Woodhouse; 88 at Shirebrook: *A. Mason (Mansfield), Ltd., Kirkland-ave., Mansfield; 78 at Shirebrook: *G. A. Pillatt & Son, Ltd., Quorn-rd., off Haydn-rd., Nottingham; 38 at Blackwell: *T. A. Herrod, Ltd., Portland-st., Sutton-in-Ashfield.

Bolton.—12 bungalows and two houses at Parkfield site, for B.C.: *F. Pardon, Ltd., Glebe-st., Bolton.

British Railways (London Midland Region).—New contracts placed:—Demolition & Construction Co., Ltd., 3, St. James's-sq., London, S.W.1, for demolition of portions of platform roofing and stripping of roof coverings over platforms Nos. 4 and 5 (stage 2) at Preston station; Leonard Fairclough, Ltd., Terminal House, Grosvenor-gdns., London, S.W.1, for drainage and formation works on Banbury branch; Robert Batey & Co., Ltd., 109-111, Lowther-st., Carlisle, for construction of eight platelayers' cabins on the Lancaster and Carlisle line; Leonard Fairclough, Ltd., Chapel-st., Adlington, Lancs, for supply and delivery only of reinforced concrete units for bridgeworks; J. Arundel & Co. (Louth), Ltd., Cornmarket, Louth, Lincs, for labour only for cleaning and painting of bridges from Chiltern station to Bedford; The Butterley Co., Ltd., Engineering Works, Butterley, nr. Derby, for fabrication of steelwork for reconstruction of Bridge No. 151, under the down line, Baswich viaduct, Trent Valley line.

Cockermouth.—Extensions at Davenby Hospital, for Reg. Hospital Brd.: *John Laing & Son, Ltd., Dalston-rd., Carlisle.

Colwyn Bay.—Six bungalows and one house, for T.C. at Voryn-ave., Old Colwyn: *Wm. Evans, Wynn-ave., Old Colwyn.

Coventry.—Preservation of ruined cathedral: *J. R. Deacon, Ltd., Lombard-st., Lichfield, £10,000 (licence issued).

Cumberland.—Extensions to West Cumberland Silk Mills, Hensingham: *John Laing & Son, Ltd., London.

Darlington.—32 houses for T.C. at Haughton West site. E. A. Tornbohm, Boro' A.: *Shepherd & Co., York, £45,936.

Ellesmere (Salop).—12 cottages for Duke of Westminster: *John Laing & Son, Ltd., London.

Ellesmere Port.—Erection of non-traditional houses, for T.C.: *Holland & Hannen and Cubitts, Ltd., Liverpool, £796,288

Epping.—35 houses at No. 2 site, Netteswell, for R.D.C.: *R. E. Choles, North Weald, £43,404.

Glasgow.—Fittings and other additions for extension to the Mitchell Library, North-st., Charing Cross, for Corpn. Architect is James MacMillan Riddet, M.Inst.C.E., Master of Works Offices, Municipal-bldgs., George-sq., Glasgow, C.1. *Dick and Benzie, Ltd., Pollockshields, Glasgow, £11,011.

Glasgow.—Fittings and additions at old Stock Exchange-bldgs., Queen-st., for Corpn. Architect is James MacMillan Riddet, M.Inst.C.E., Master of Works Office, Municipal-chbrs., George-sq., Glasgow, C.1. *Dick and Benzie, Ltd., Pollockshields, Glasgow, £11,000.

Haslingden.—34 houses and four flats at Broadway estate, for T.C.: *T. Brown, Ltd., 4, Fields-rd., Haslingden.

Hucknall.—40 houses at Ruffs Farm estate, for U.D.C.: *Gascoigne & Tyler, Ltd., 10, Charles-st., Hucknall, £54,487.

¶London (Air Ministry).—List of new works contracts to the value of £500 or over placed by Directorate of Contracts for the week ended August 23:—*Dismantling and re-erection work*: Frederick Braby and Co., Ltd., London, S.E.8. *Building work*: R. G. Carter, Ltd., Norwich; F. Shepherd and Son, Ltd., York; G. and J. Seddon, Ltd., Walkden, Manchester; F. R. Hipperson and Son, Ltd., London, E.C.2. *Hardstandings*: Thos. Lowe and Sons, Ltd., London, W.6; Gee Walker and Slater, Ltd., Derby. *Re-surfacing work*: Northcotts of Exeter, Ltd., Exeter. *General maintenance work*: Bettles Building Co., Ltd., Peterborough; Ashworth Bros., Colwyn Bay; Holborow and Sons, Ltd., Tetbury, Glos. *Agricultural maintenance work*: Stanley H. S. Overton (Airfields), Ltd., Navenby, Lincoln.

¶London (M.O.W.).—Contracts placed by M.O.W. for week ended August 16:—

Lancs: Ministry of Labour, N.S.H.C. Hostel, "Woodlands," Southport-rd., Chorley, Internal decorations, James Marsden, Ltd., 50, Lancaster-rd., Preston. *Montgomeryshire (Wales)*: P.O. Temp. T.R.S. Machynlleth, Prefab. hut and site works, John Evans & Sons, Station Yard, Cemmaes-rd., Machynlleth. *Northumberland*: Ministry of National Insurance, Benton Park-rd., Newcastle-on-Tyne, Internal and external redecorations, T. W. Nixon, Ltd., Northumberland-rd., Newcastle-on-Tyne. *Nottingham*: Automatic Telephone Exchange, Beeston, Extensions, R. Hurstwayte, 37, Haydn-rd., Nottingham; Welbeck Abbey College, Alterations and adaptations, Gee, Walker & Slater, Ltd., Uttoxeter Old-rd., Derby. *Staffs*: P.O. Training School, Duncan Hall, Yarnfield, H.V. Station, Elsby Bros., Sneyd Hill, Burslem, Stoke-on-Trent; R.O.F., Swynnerton, Adaptations and reinstatement of Pyrotechnico Section and Chronograph room only, M. J. Gleeson (Contractors), Ltd., 816, Chesterfield-rd., Sheffield 8. *Suffolk*: Rowley Mile, A/F. M/Materials, Newmarket, Weatherproofing of hangars Nos. 1, 2, 3, 4 and 5. Bitumen Industries, Ltd., Farnham-rd. Trading Estate, Slough, Bucks.

¶London (War Dept.).—Works contracts placed by War Dept. during week ended August 16:—

Nottinghamshire: Electrical installation, W. J. Furse & Co., Ltd., Nottingham. *Kent*: Concrete work, H. Goodsell, Maidstone. *Denbighshire*: Building work, P. Bailey & Co., Hanforth. *Shropshire*: Painting, F. Labbett & Sons, Nottingham. *Staffordshire*: Painting, F. Labbett & Sons, Nottingham. *Worcestershire*: Hutting, Lewis & Watters, Leamington Spa. *Wiltshire*: Building work, H. J. Walker & Sons, Ltd., Bristol. *Dorsetshire*: Miscellaneous, Arthur Parsons & Sons, Puddletown, nr. Dorchester. *Surrey*: Building work, E. C. Hughes, Ltd., Wokingham. *Hampshire*: Building work, Geo. Kemp, Stroud & Co., Ltd., Aldershot. *Cornwall*: Building work, Turner & Ellery, Bodmin. *Wiltshire*: Concrete work, William F. Rees, Westminster; Building work, E. W. Beard, Ltd., Swindon. Demolition work, The Demolition & Construction Co., Ltd., London, S.W.1. *Hampshire*: Building work, A. E. Jukes & Son, Ltd., Newport, I.o.W.

Loughborough.—Eight shops with flats over at Thorpe Acre estate, for T.C.: *H. Hammond & Sons, Ltd., Bridge-st., Loughborough, £21,597.

Newark.—Four shops and flats at Eton-ave. and Beech-ave. site, for T.C.: *E. Coleman, Ltd., 20, Diamond-ave., East Kirkby, Notts, £9,420.

Newark.—66 houses for T.C.: *G. Wimpey & Co., Ltd., London, £87,622.

Newcastle-on-Tyne.—Alterations at Walkergate Hospital, Newcastle. Architects, L. J. Couves & Partners, Carliol House, Newcastle: *Peter Edwards, 23, Back Causey-st., Gosforth, Newcastle-on-Tyne. Cost about £14,500.

Newcastle-on-Tyne.—10 houses at Corchester Walk: *Hadden & Hillman, 127, New Bridge-st., Newcastle-on-Tyne.

Newcastle-on-Tyne.—New buildings for Tyne Improvement Commission. Architects, L. J. Couves & Partners, Carliol House, Newcastle: *J. W. Vickers, 4, Plummer-st., Newcastle-on-Tyne.

Newcastle-under-Lyme.—Houses for B.C.:—Six at Abbotts-way: *J. Willis; six at Lincoln-ave.: *Willis Bros., Ltd.; 11 at Langdale-rd.: *R. Nabney, Ltd. (all of Newcastle).

Northumberland.—200 houses for miners at Burradon: *G. Wimpey & Co., Ltd., Orchard House, Jesmond, Newcastle.

Oldham.—Erection of Hathershaw sec. sch., for E.C.: H. Wimpenny, Ltd., Slaithwaite, nr. Huddersfield.

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Oldham.—Houses at Fitton Hill estate, for B.C.:—133: *T. Partington & Son (Builders), Ltd.; 30 bungalows: *R. Partington & Son, Ltd., Middleton; 14 bungalows at Limeside estate: *H. Massey, Failsworth; 32 aged persons' flatlets: *P. Hamer, Ltd., Swinton, nr. Manchester.

Ossett.—40 houses at Manor-la., for T.C.: *Harlow & Milner, Ltd., Wakefield, £44,288.

Oswestry.—34 houses, for T.C.: *E. W. Gittins & Sons, Ltd., Oswestry, £47,275.

Rowley Regis.—86 houses and 12 garages at Coxs Farm estate, for T.C.: *Nathan Hyde, Ltd., 6, Claremont-rd., Sedgley, £119,227.

Salisbury and Wilton.—Houses for R.D.C.:—Eight at Moot-la., Downton: *Percy Jenkins, £10,060; 38 houses and site works: *Reema Construction Co., Ltd., £52,202; 18 at Quidhampton: *Reema Construction Co., Ltd., £25,689; four at Fovant: *Dawkins Bros., £6,788.

Sittingbourne and Milton.—Erection of 28 dwellings on the Canterbury-rd. housing estate (9th contract). The following have been recommended for acceptance under a joint tender:—E. Bishop & Sons, Ltd., Albany-rd.; G. H. Keel & Son, Ltd., 34, Goodnestone-rd.; T. Monk & Sons, Ltd., Canterbury-rd.; C. L. Taylor & Son, Chalkwell-rd.; Wraight, Ltd., 23, London-rd. Joint tender, £41,314. (All of Sittingbourne.)

Sunbury-on-Thames.—49 houses at Upper Halliford, for U.D.C. Braddell & Laurence, architects, 6, Bedford-row, London, W.C.1. Quantities by B. M. Kimber: *J. Farmer (Builders), Ltd., 46/47, Hanworth-rd., Sunbury, £74,699.

Swale.—12 houses with sewage works, etc., at Lower Halstow, for R.D.C., H. D. Hargraves, M.Inst.Mun.E., E. & S., 48, Bell-rd., Sittingbourne: *L. Edwards & Sons, Ltd., Breach-la., London-rd., Newington, nr. Sittingbourne, Kent, £16,048.

Urmston.—Additional 12 houses at Nursery-rd. site, for U.D.C.: *Humphrey Park Estates, Ltd., Humphrey-la., Urmston, £16,122 (extension to contract).

West Lancs.—20 houses at Downholland estate, for R.D.C.: *Frank Gatley, Ltd., Lydiate, £29,780.

Whitehaven.—150 Easiform houses and 50 traditional houses at Valley Scaws, for T.C.: *John Laing & Sons, Ltd., Carlisle.

Wokingham.—14 aged people's dwellings at Cock pit Path, for B.C. Eric G. V. Hives (L.), 3, Cork-st., Reading. Quantities by Henry Cooper & Sons, 6, The Forbury, Reading: *P. H. Smith (Reading), Ltd., 111, Highgrove-st., Reading, Berks, £18,979.

NEW COMPANIES

THE FOLLOWING NEW COMPANIES, registered in England, have been announced by Jordan and Sons, Ltd., company registration agents.

E. Town and Sons, Ltd. (508774). Regd. June 12, Bank-bldgs, Huddersfield-rd., Brighouse, bldrs., etc. Nom. cap.: £100. E. Town, 111, Bradford-rd., Brighouse, signs as director.

New Era Flooring Co. (Manchester), Ltd. (509083). Regd. June 21. 10, Corporation-st., Manchester, 4, paviors, and tilers, etc. Nom. cap.: £1,000. Dirs.: A. Biagioni and P. Biagioni, 19, Kenwick-dr., New Moston, Manchester.

H. Wootton and Cº., Ltd. (509109). Regd. June 23. 25, Sutton-rd., Walsall, bldrs., etc. Nom. cap.: £100. Dirs.: H. N. Wootton and Mrs. A. Wootton, 25, Sutton-rd., Walsall.

Loyds (Islington), Bldrs., and Decorators, Ltd. (509112). Regd. June 23. Nom. cap.: £100. Dirs.: B. Hammond and Mrs. J. F. M. Hammond, 66, Cranbourne-gdns., Golders-green, N.W.11.

Poulson and Son, Ltd. (509118). Regd. June 23, 1952. 30, Star-rd., W. Kensington, W.14, to take over business of bldg. contractors carried on at Star-rd., W.14, by O. Poulson and Son. Nom. cap.: £1,000 in £1 shares. Dirs.: O. F. Poulson, 30, Star-rd., W. Kensington, W.14; O. W. Poulson, 8, Uxbridge-gdns., Hanworth, Middx.

R. Dreher and Co., Ltd. (509120). Regd. June 23. 5, Kingsley-rd., Mutley, Plymouth, bldrs., etc. Nom. cap.: £500. Dir.: R. F. Dreher, 5, Kingsley-rd., Mutley, Plymouth.

R. L. Gowers and Co., Ltd. (509145). Regd. June 24. 61, High-st., Haverhill, Suffolk, bldrs., civil engng. contractors, etc. Nom. cap.: £7,500. Dirs.: R. L. Gowers and Mrs. E. M. Gowers, 61, High-st., Haverhill.

Fell Construction Co., Ltd. (509167). Regd. June 25. 111, Dark-la., Batley, bldrs., etc. Nom. cap.: £5,000. Dir.: R. Fell, 111, Dark-la., Batley.

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